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# ILLINOIS CORN PERFORMANCE TESTS . . . 1939



University of Illinois • Agricultural Experiment Station

*Bulletin 463*

In cooperation with the Division of Cereal Crops and Diseases, Bureau of Plant Industry, U. S. Department of Agriculture, and the Illinois State Natural History Survey

## CONTENTS

	PAGE
<b>DESCRIPTION OF TESTS AND SEASONAL PROBLEMS</b>	
Scope of Tests .....	171
Soil Characteristics of Fields .....	171
Method of Planting .....	172
Seasonal Conditions .....	174
Insect Problems .....	174
Disease Prevalence .....	175
Dropped Ears .....	179
Measuring Performance of Entries .....	180
 <b>RESULTS OF TESTS (Text)</b>	
Results of 1939 Performance Tests .....	181
Four-, Three-, and Two-Year Summaries .....	184
Soil Adaptation Tests .....	209
Summary .....	214
 <b>RESULTS OF TESTS (Tables)</b>	
Northeastern Illinois: Libertyville .....	188
Northern Illinois: Kings .....	190
West North-Central Illinois: Cambridge .....	192
East North-Central Illinois: Reddick .....	196
West-Central Illinois: Littleton .....	198
East-Central Illinois: Paxton .....	201
South-Central Illinois: Sullivan .....	203
Southern Illinois: Shobonier .....	205
Southeastern Illinois: Albion .....	207
Southwestern Illinois: Modoc .....	208
Soil Adaptation Tests: Central Illinois .....	210
Summary of Hybrid Superiority, Nine Fields, 1936-1939 .....	215
 <b>SOURCES OF SEED</b>	
Contributors of Seed for the 1939 Tests .....	186
Pedigrees of Illinois, U.S., and Iowa Hybrids .....	187

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## Sixth Annual

# Illinois Corn Performance Tests 1939

By R. R. COPPER, G. H. DUNGAN, A. L. LANG, J. H. BIGGER,  
BENJAMIN KOEHLER, and OREN BOLIN<sup>1</sup>

**M**ORE THAN five and a half million acres of Illinois corn land were planted with hybrid seed in 1939,<sup>1</sup> or 69 percent of the total corn acreage of the state. In central and northern Illinois the percentage of hybrid corn was even higher.

A favorable season, combined with the extensive use of hybrid seed corn adapted to the locality and to the soil where planted, resulted in an average yield over the entire state of 52 bushels an acre, the highest ever reached in Illinois.

### SCOPE OF THE TESTS

A total of 331 hybrids and 29 open-pollinated varieties were included on the ten Illinois corn-performance test fields in 1939. This was the largest number of entries on record. On the central and north-central fields the number of entries was increased from 60 to 73 or 75, owing to demand on the part of producers for the opportunity to enter their crosses. The other fields included 61 entries or less. Five open-pollinated varieties were used as a check on each field. Forty-eight companies and individuals entered hybrid seed and 27 companies and individuals furnished the open-pollinated varieties.

Seed samples were taken from the warehouses of the producers entering the corn. Samples which were taken from less than five different bushel lots are marked with a star (\*) in the tables. Whenever possible, the grade sampled was that known as "regular flat."

Not only were records made of the yields of the various entries, but measurements were also made of lodging resistance and soil adaptability.

### SOIL CHARACTERISTICS OF FIELDS

The fields chosen for the 1939 tests were, on the whole, medium to high in productivity. In locating a field, effort was made to select a soil type that occurs extensively in the region represented by the field. Furthermore care was taken to have each field as nearly uniform

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as possible, both in soil type and in drainage conditions. At Shobonier small "slick spots" occurred thruout the testing field.

The general location of the ten test fields is shown by the map on page 216. General information on soil characteristics and soil-management practices is indicated in Table 2.<sup>1</sup>

Drainage is described as *rapid*, *moderate*, and *slow*. When applied to the surface, *rapid drainage* indicates a tendency to erode, *moderate* indicates satisfactory runoff with minimum erosion, while *slow* indicates practically no natural surface movement. When applied to underdrainage, *rapid* indicates the existence of a drouthy condition, *moderate* indicates relatively free movement of excess ground water to tile but retention of sufficient moisture for normal plant growth, and *slow* indicates a nearly impervious subsoil.

**Table 1.—GENERAL INFORMATION: Illinois Cooperative Corn Performance Tests, 1939**

Location of field	County	Cooperator	Number of entries	Date planted	Date harvested	Average acre-yield all entries	
						Total	Sound
NE—Libertyville...	Lake.....	Lewis Mills.....	59	May 19	Oct. 12	bu. 65.6	bu. 65.4
N—Kings.....	Ogle.....	Elmer Hayes.....	60	May 12	Oct. 24	88.1	87.5
WNC—Cambridge...	Henry.....	Earl Collis.....	75	May 19	Oct. 25	116.3	114.4
ENC—Reddick.....	Kankakee....	E. S. Boyer.....	73	May 11	Oct. 19	77.2	76.5
WC—Littleton.....	Schuyler.....	Ira Burnham.....	75	May 20	Oct. 26, 27	93.1	92.3
EC—Paxton.....	Ford.....	Arthur Stevenson.....	75	May 11	Oct. 31	72.2	70.0
SC—Sullivan.....	Moultrie.....	Masonic Home Farm....	61	May 3	Oct. 11	95.9	94.2
S—Shobonier.....	Fayette.....	Henry Opfer.....	58	May 15	Oct. 17	55.4	54.7
SE—Albion.....	Edwards.....	Ernest Schmidt.....	53	May 16	Oct. 18	69.1	66.5
SW—Modoc.....	Randolph....	Bernard Naeger.....	57	May 18	Oct. 5	69.2	67.5

## METHOD OF PLANTING

Each test field was planted as described in Bulletin 427 (1936). On all but the Modoc field, each entry (variety or hybrid) was planted in 10 plots, each plot being 12 hills long and 2 rows wide. At Modoc 45 of the 57 entries were planted in 9 plots instead of 10.

All plots were planted 3 kernels to a hill, and the only correction made for imperfect stand was to adjust the yields for missing hills. All seed was treated with organic mercury dust before planting.

Entries were arranged in the controlled random order, as described in Bulletin 427. With the few exceptions indicated in the tables of results, all plots of each entry were harvested.

<sup>1</sup>HERMAN WASCHER, Assistant Chief in the Soil Survey, determined the soil type, uniformity, and physical characteristics of each field. H. J. SNIDER, Assistant Chief in Soil Experiment Fields, made the chemical analyses.

Table 2.—TESTING FIELDS: Soil Characteristics and Management Practices

a—Surface color and drainage b—Subsoil texture, and underdrainage	pH values — Surface* Subsoil†	Organic matter — Surface* Subsoil†	Total nitrogen — Surface* Subsoil†	Available phosphorus — Surface* Subsoil†	Available potassium — Surface* Subsoil†	Previous crops and soil management
Northeastern						
<i>Libertyville—Saybrook silt loam (light)</i>						
a—Brown to light brown, moderate.....	5.1*	perct. 6.5*	lbs. 6420*	lbs. 15*	lbs. 350*	Corn 1936, wheat 1937, sweet clover 1938; manured 1936, 1939 spring-plowed
b—Silty clay loam, moderate.....	5.4†	4.0†	3760†	4†	220†	
Northern						
<i>Kings—Tama silt loam (dark)</i>						
a—Brown, moderately rapid.....	5.3*	5.6*	5210*	127*	340*	Small grain 1936, corn 1937, barley 1938; limed 1938; rock phosphate 1938, spring- plowed
b—Silty clay loam, moderate.....	5.1†	4.5†	4720†	20†	190†	
West north-central						
<i>Cambridge—Muscatine silt loam</i>						
a—Brown, moderate.....	5.0*	5.7*	5870*	25*	430*	Corn 1936, oats 1937, red clover 1938; manured 1938, fall- plowed
b—Silty clay loam, moderate.....	5.2†	4.5†	4360†	8†	310†	
East north-central						
<i>Reddick—Lisbon clay loam</i>						
a—Black, slow.....	6.4*	6.0*	5800*	173*	280*	Corn 1936, soybeans 1937, wheat (Hubam clover) 1938; rock phosphate 1938, spring- plowed
b—Silty clay loam, moderate.....	6.5†	3.3†	3200†	95†	250†	
West-central						
<i>Littleton—Ipava silty clay loam to clay loam</i>						
a—Black, moderately slow to slow.....	5.7*	4.0*	4520*	220*	325*	Oats 1936, wheat 1937, mam- moth clover 1938; limed 1927, fall-plowed
b—Clay loam, moderate.....	5.8†	4.1†	4800†	240†	450†	
East-central						
<i>Paxton—Drummer clay loam</i>						
a—Black, slow.....	5.6*	5.7*	5710*	123*	420*	Small grain 1936, sweet clover 1937, corn 1938; spring- plowed
b—Clay loam, moderate.....	6.0†	2.9†	3160†	140†	450†	
South-central						
<i>Sullivan—Flanagan silt loam (light)</i>						
a—Brown to light brown, moderate.....	5.5*	4.6*	4370*	19*	230*	Corn 1935, oats 1936, sweet clover and timothy pasture 1937, 1938; limed 1938, fall- plowed
b—Silty clay loam, moderate.....	5.5†	2.9†	3160†	8†	270†	
Southern						
<i>Shobonier—Cisne silt loam (slick spots)</i>						
a—Gray, slow.....	5.2*	3.0*	2790*	23*	130*	Corn 1936, oats 1937, rye 1938; manured 1939, limed 1933
b—Clay, very slow.....	4.9†	1.9†	2000†	8†	190†	
Southeastern						
<i>Albion—Patton silty clay loam</i>						
a—Brownish gray, slow.....	5.7*	3.6*	3830*	166*	285*	Oats (sweet clover) 1936, corn 1937, oats (sweet clover) 1938; limed, spring-plowed
b—Silty clay loam, moderately slow.....	6.6†	2.1†	2480†	130†	230†	
Southwestern						
<i>Modoc—Beaucoup clay loam (bottom)</i>						
a—Drab, moderately slow.....	6.3*	3.4*	3360*	500*	655*	Corn 1936, wheat 1937, red clover 1938; no treatment, fall-plowed
b—Clay loam, moderately slow.....	6.6†	2.1†	2680†	500†	650†	

\*These symbols are used to remind the reader that the first figure in these columns refers to surface conditions, the second to sub-surface conditions.

## SEASONAL CONDITIONS

At Kings, Cambridge, and Littleton—the north, west north-central, and west-central fields—growing conditions in 1939 were more favorable than at the other fields.

Temperatures during the growing season were satisfactory for all of the test fields, but rainfall distribution was not favorable on some of them. All the fields were planted in good moisture except the Albion field, which was rather dry. However, after the first cultivation at Albion there was an overabundance of rain, which slowed up the growth of the plants. All but the Shobonier field had ample moisture after planting, and the corn made an excellent start. The Shobonier field was dry until about the second week in June, but had plenty of rain for the main part of the growing season.

The abundance of rain early in the season on a few fields made for a slightly shallow root system, the effects of which appeared later during the long dry spell in August. The Paxton and Reddick fields in particular appeared to suffer on this account, and corn matured a little earlier than usual on these fields. The Libertyville field suffered the most from the late summer drouth and hot weather, the corn on this field showing some tendency to be light and chaffy. The corn on the Littleton and Cambridge fields remained green longer than on the other fields in the test, maturing at a more nearly normal time than on the other fields.

The abundance of moisture during July favored the development of ear rots and damaged corn, but the hot dry weather in August checked this condition. The Paxton and Albion fields had a greater amount of *Diplodia* ear rot than any of the others.

None of the test fields suffered any damage from hail or windstorms.

## INSECT PROBLEMS

The Illinois corn crop suffered the minimum of damage from insects during the 1939 growing season. Just as this season was the most favorable one for corn on record, it was the least favorable one for insect development. Furthermore when plants are grown under conditions conducive to their maximum development, they can better withstand the attack of such insects as may be present.

At none of the test fields were there enough chinch bugs to produce measurable differences in the condition of the crop, nor was there any grasshopper problem in 1939. There are no records, therefore, of the relative ability of the different entries to withstand attack by these two insects.

The southern corn rootworm, *Diabrotica duodecimpunctata* Fab., was abundant enough on only two fields (Cambridge and Littleton)

to produce measurable effects on the corn plants. Even on these two fields the damage was not great, the average amount of lodging (plants leaning 30 degrees or more) of the hybrids being 14.4 percent at Cambridge and 13.6 percent at Littleton. Rootworms attacked the plants only in the early part of the season; and much of the corn that lodged because of this damage later elbowed and straightened up, so that the lodging was not noticeable on casual observation. It was measured, however, at harvest time, and is recorded in Tables 6A and 8A on pages 193 and 199.

Another type of insect damage appeared during the 1939 season. The corn leaf aphid, *Aphis maidis* Fitch, attacked the field near Libertyville at tasseling time. Damage was not extensive, a survey showing that only 1.2 percent of the plants were severely affected. However, a few entries were very susceptible to the aphid. The open-pollinated varieties were more susceptible than the hybrids, indicating that plant breeders are successfully producing hybrids resistant to this aphid.

### DISEASE PREVALENCE

Disease losses were low in 1939 compared with those of 1938. But in spite of general high yields, certain diseases took a toll. Unquestionably some entries ranked low mainly because of injury from stalk rot.

**Diplodia Stalk Rot.** Premature dying of plants was first noticed in some hybrids in mid-August. By mid-September some stalks had died prematurely on nearly all the test fields and in most of the corn-fields of the state. On one day the leaves of the plant would be alive and on the next day they would be dead, as tho they had been frosted. A few days later they would change to straw color and the main stalk would be blanched. Where such plants were scattered thruout the field among the green plants—some dying one day, others the next, etc.—the stalks of all prematurely dead plants were invariably rotted severely by *Diplodia* (page 178). Usually some of the green plants also showed *Diplodia* stalk rot infections but to a less extent.

A count of the prematurely dead plants at a selected time was used as a measure of the degree of susceptibility of a hybrid to damage by *Diplodia* stalk rot. All the hybrids on a given field were checked for prematurely dead plants on the same day, and without knowledge by the checker of the identity of the entries.

Three fields—Sullivan, Littleton, and Cambridge—were best suited for the comparison of stalk-rot susceptibility (Table 3). Test fields farther south had the least stalk rot. All test fields in central and northern Illinois had considerable stalk rot, but as a number of the fields began drying up early in September regardless of stalk rot, the basis for judging stalk-rot susceptibility was obliterated. This general drying of fields was attributed partly to the late-season drouth.



**Table 3.—DISEASE DAMAGE: Premature Dying of Corn Plants Caused Principally by Diplodia Stalk Rot, at Three Locations in Illinois (Observed September 12-20, 1939)**

Hybrid	Extent of premature dying			Hybrid	Extent of premature dying		
	Cam- bridge WNC	Little- ton WC	Sulli- van SC		Cam- bridge WNC	Little- ton WC	Sulli- van SC
	perct.	perct.	perct.		perct.	perct.	perct.
Bear OK-30.....	.....	.....	29.5	Illinois 863.....	.....	.....	40.2
Bear OK-49.....	2	.....	.....	Illinois 877.....	.....	.....	28.2
Bear OK-60.....	.....	28.7	50.9	Illinois 885A.....	.....	.....	19.9
Bear OK-63.....	12	.....	.....	Illinois 936.....	18	.....	.....
Bear OK-72.....	.....	18.7	.....	Illinois 944.....	22	51.3	.....
Bear OK-74.....	.....	.....	21.8	Illinois 947.....	.....	.....	45.3
Bear OK-79.....	.....	8.8	.....	Illinois 960.....	26	58.8	.....
Bear OK-80.....	.....	.....	29.1	Illinois 972.....	.....	32.5	.....
Crow 402.....	22	.....	.....	Illinois 976.....	.....	63.8	.....
Crow 602.....	44	.....	.....	Independent Hyb. Prod. D5.....	16	.....	.....
Crow 603.....	.....	.....	49.6	Independent Hyb. Prod. D6.....	20	.....	.....
Crow 607.....	.....	7.5	.....	Independent Hyb. Prod. D7.....	16	.....	.....
Crow 608.....	.....	31.3	.....	Independent Hyb. Prod. D8A.....	.....	40.0	.....
Crow 618.....	22	.....	.....	Independent Hyb. Prod. D10.....	.....	27.5	.....
Crow 640.....	.....	65.0	.....	Independent Hyb. Prod. 411.....	.....	.....	42.5
Crow 701 (W).....	.....	.....	10.9	Independent Hyb. Prod. 420.....	.....	28.8	.....
Crow 804.....	.....	.....	32.5	Iowaleth AQ.....	10	46.3	.....
Crow 806.....	.....	.....	13.9	Iowaleth CI.....	2	33.8	.....
DeKalb 606.....	32	.....	.....	Iowaleth 15.....	30	.....	.....
DeKalb 615.....	44	.....	.....	Iowaleth 20B.....	16	.....	.....
DeKalb 628.....	22	.....	.....	Iowaleth 25.....	14	32.5	.....
DeKalb 639.....	48	.....	.....	Iowaleth 28N.....	.....	.....	31.5
DeKalb 800.....	0	20.0	.....	Iowaleth 30.....	.....	.....	57.4
DeKalb 816.....	.....	23.8	39.2	Kelly K-99.....	.....	71.3	.....
DeKalb 825.....	10	37.5	52.8	Kelly K-100.....	.....	15.0	.....
DeKalb 827.....	14	41.3	.....	Kelly K-374.....	.....	.....	22.4
DeKalb 888.....	.....	10.0	14.4	Moews-Lowe 20.....	10	.....	.....
DeKalb 891.....	.....	.....	22.8	Moews-Lowe 120.....	8	.....	.....
DeKalb 892.....	.....	7.5	.....	Moews-Lowe 514.....	10	46.3	.....
DeKalb 899.....	.....	.....	2.9	Moews-Lowe 520.....	.....	.....	69.8
DeKalb 918 (W).....	.....	.....	24.6	Moews-Lowe 523.....	4	.....	.....
DeKalb 922 (W).....	.....	.....	25.0	Moews-Lowe 524.....	.....	41.3	.....
Doubet, E. W., CR-46.....	30	.....	.....	Moews-Lowe 525.....	.....	.....	31.5
Doubet, E. W., CR-47.....	30	16.3	.....	Moews-Lowe 850.....	.....	25.0	42.7
Doubet, E. W., CR-114.....	.....	.....	.....	Morgan 52.....	42	.....	.....
Doubet, E. W., CR-117.....	.....	61.3	.....	Morgan 52A.....	16	.....	.....
Funk G-32.....	6	.....	.....	Morgan 62.....	61	75.0	.....
Funk G-46.....	.....	13.8	10.4	Morgan 82.....	.....	51.3	.....
Funk G-53.....	10	36.3	.....	Mountjoy 2120.....	.....	12.5	.....
Funk G-63.....	20	.....	.....	Mountjoy 2121.....	.....	13.8	.....
Funk G-80.....	.....	1.3	3.6	National 119.....	.....	48.7	.....
Funk G-81.....	.....	8.8	.....	National 119.....	24	.....	.....
Funk G-83.....	.....	.....	3.2	National 124.....	46	.....	.....
Funk G-94.....	.....	20.0	.....	National 126.....	.....	46.3	.....
Funk G-123.....	.....	.....	15.8	National 131.....	38	.....	.....
Funk G-167.....	.....	.....	3.3	National 132.....	.....	.....	38.4
Funk G-169.....	0	.....	.....	Null N-16.....	.....	18.8	.....
Funk G-212.....	16	51.3	.....	Null N-27.....	.....	32.5	.....
Funk G-235.....	.....	.....	55.1	Null N-43.....	.....	.....	22.1
Funk G-527 (W).....	.....	.....	15.6	Null N-54.....	.....	13.8	.....
Funk G-571 (W).....	10	.....	.....	Null N-61.....	.....	.....	33.0
Hahn 151.....	32	.....	.....	Null N-92.....	4	.....	.....
Hahn 153.....	22	.....	.....	Null N-631.....	2	.....	.....
Illinois 126.....	.....	27.5	31.4	Null-Vollmer 10.....	.....	.....	14.2
Illinois 200.....	2	2.5	9.7	Null-Vollmer 20.....	.....	.....	40.7
Illinois 201.....	4	10.0	.....	Null-Vollmer 97.....	.....	35.0	.....
Illinois 206.....	.....	11.3	.....	Null-Vollmer 98.....	.....	28.8	.....
Illinois 374.....	14	.....	.....	Pfister 360.....	26	.....	.....
Illinois 432.....	.....	.....	18.0	Pfister 360A.....	40	.....	.....
Illinois 499.....	.....	40.0	46.9	Pioneer 307.....	14	43.8	47.8
Illinois 582.....	.....	.....	61.7	Pioneer 313.....	2	65.0	58.9
Illinois 614.....	.....	55.0	51.0	Pioneer 314.....	40	.....	.....
Illinois 710.....	.....	.....	59.0	Pioneer 317.....	20	.....	.....
Illinois 751.....	26	.....	.....				
Illinois 784.....	.....	.....	16.6				
Illinois 805.....	.....	.....	19.3				

(Table is concluded on next page)

Table 3.—*Concluded*

Hybrid	Extent of premature dying			Hybrid	Extent of premature dying		
	Cam- bridge WNC	Little- ton WC	Sulli- van SC		Cam- bridge WNC	Little- ton WC	Sulli- van SC
	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>		<i>perct.</i>	<i>perct.</i>	<i>perct.</i>
Pioneer 330.....	10	...	...	U.S. 35.....	...	36.9	...
Pioneer 331.....	8	37.5	...	U.S. 44.....	19.5	52.5	78.4
Pioneer 501 (W).....	...	5.0	1.5	U.S. 45.....	38	...	...
Pioneer 502 (W).....	...	...	6.4				
Sass, L. A., 50.....	42	...	...	Open-pollinated			
Sass, U. G., 305.....	8	...	...	Bunning White Dent.....	...	...	18.3
Seeber 9.....	...	...	17.6	Canterbury Yellow Dent.....	...	10.0	29.0
Seeber 11A.....	8	48.8	...	Doubet Yellow Dent.....	12	32.5	...
Stiegelmeier 38.....	...	22.5	...	Hunt White Dent.....	38	...	...
Stiegelmeier 90.....	22	...	...	Krug.....	24	...	...
Stiegelmeier 100.....	...	8.8	...	McKeighan Yellow Dent.....	20	...	...
Stiegelmeier 701.....	12	...	...	Mountjoy Utility Dent.....	...	36.3	...
Stiegelmeier 702.....	18	...	...	Rice White Dent.....	...	...	28.0
Stiegelmeier 802.....	...	33.8	...	Roeschley Yellow Dent.....	18	...	...
Stiegelmeier 901.....	...	31.3	...	Shuman Golden Beauty.....	...	...	41.5
Stiegelmeier 905.....	...	...	43.1	Sommer Yellow Dent.....	...	27.5	...
U.S. 5.....	6	32.5	...	Station Yellow Dent.....	...	33.8	...
U.S. 13.....	...	21.3	27.8	Wilson Yellow Dent.....	...	...	30.6
U.S. 14.....	10	30.0	...				

**Reduction in Yield From Stalk Rot.** The appearance of stalk rot and the dying of plants occurred in 1939 at about the same dates as in 1938, but the damage to yield was considerably less. One probable reason for this fact was the unusually fast growth of the corn plants and the development of the ears earlier than in a normal season; another reason was that Stewart's disease caused less damage than in 1938. None of the entries, however, in which a large number of stalks died prematurely ranked very high in yield or in general performance, suggesting that significant damage was caused by stalk rot.

While it is not true that hybrids that are resistant to stalk rot are always high yielding, nevertheless correlations between yield and resistance to stalk rot are fairly good. At Cambridge the correlation was .466, at Littleton .752, and at Sullivan .409.

**Stalk Rot and Stalk Breaking.** There is considerable interest in the question to what extent stalk breaking indicates stalk rot. Data taken this year showed a very close relationship in some crosses and very little relationship in others. In a field of single crosses at Urbana the correlation between stalk breaking and stalk rot was only .123, which is not significant. Two tests with more single crosses conducted by the Independent Hybrid Producers of Illinois, Inc., gave correlations of .307 and .423; these figures are statistically significant, but here also some striking exceptions occurred.

**Stewart's Disease.** Stewart's disease did not cause as much damage to field corn in 1939 as was expected, considering the heavy infection that occurred in 1938 and the moderate winter that followed. True to predictions, however, early sweet corn was more damaged



**Stewart's disease on leaves of dent corn**

Infection is carried to the leaves by flea beetles. From points of infection the disease spreads mainly along the veins, killing the leaf tissue and leaving irregular streaks.



**Hill of corn killed by Diplodia stalk rot**

Plant at left shows typical surface discoloration; center plant shows the Diplodia pycnidia, visible as small black dots; the plant at the right is cut open to show rot in the interior.



than it had been for several years. Leaf infections in dent corn (page 178) could be found in late summer in nearly every field as far north as Joliet and Mendota but severe damage like that in 1938 failed to materialize. The very severe infection at Sullivan caused a loss of 20 percent of the leaf surface by September 12.

**Ear Rots.** Frequent moderate rains during the first half of summer made conditions ideal not only for corn growth but also for *Diplodia* infection. When the ears were in the milk stage, an alarming number of plants died from *Diplodia* rot in some fields. Unusual losses in yield, resulting from ear rot, were expected but a change to dry weather after early August checked this tendency, making state losses somewhat below the average of the last fifteen years.

The amount of ear rot in the performance tests is indicated in the tables under the heading "Damaged corn in shelled sample." The rot damage in 1939 was caused principally by *Diplodia*. While the exact significance of each one of those percentage figures is admittedly uncertain, there is no question that some hybrids are distinctly more resistant to ear rots than others.

In seven of the test fields the hybrid corn had less rot than the open-pollinated corn. The average damage from ear rot on all the fields was 1.67 percent for the hybrids and 1.76 percent for the open-pollinated varieties. These figures do not show a significant advantage for hybrids. The low losses in Illinois from ear rots during the last few years must be attributed in large part to seasonal conditions and other environmental factors rather than entirely to the planting of a greater acreage to hybrids. It is feared that this low point in the cycle of rots has led some to forget the seriousness of the ear-rot threat; and consequently that there will be much disappointment and complaint when, by the return of weather conditions favorable to ear rot, farmers are again faced with this problem.

**Other Diseases.** Moderate but adequate moisture and spring temperatures above normal resulted in good corn stands and little damage from seedling diseases. "Purple corn," a discoloration and stunting of young corn plants associated with phosphorus deficiency, was reported by farmers at numerous places in the state but did not appear on the test plots. Smut was of minor importance except in those inbreds and crosses especially susceptible to it.

### DROPPED EARS

While a count was made of the dropped ears on all the test fields, there were too few such ears for any significant conclusions to be reached. They were reported very extensively in August in farmers' fields where *Diplodia* had done considerable damage and where high winds had occurred.

## MEASURING PERFORMANCE OF ENTRIES

The entries in 1939 were rated, as they were each year since 1935, on the basis of two measures of performance—erect plants at harvest (lodging resistance) and yield of sound corn.

**Erect Plants.** The percentage of erect plants in each entry on each field was estimated at the time of harvest. The *rating* for erect plants of an entry is the ratio of erect plants of that entry to the average number of erect plants on the field, multiplied by 100.

There were three types of lodging on the test fields—that due to rootworm damage, to broken stalks just below the ear, and to broken stalks toward the base of the plant. Photographs on page 183 show the two latter types of lodging.

**Sound Corn.** To determine shelling percentage, the entire yield from one replicate of each entry was shelled. From this shelled corn one sample was taken to determine the percentage of moisture at harvest, and another to determine the percentage of damaged kernels, by weight. The moisture determinations were made with a Tag-Heppenstall moisture meter. The percentage of damaged corn was determined according to the Federal Grain Standards.

The total acre-yield was calculated as shelled corn carrying 15.5 percent moisture, the upper limit allowable for No. 2 corn. The yield of sound corn was computed by deducting the amount of damaged corn from the total yield.

The rating on sound yield is the ratio, expressed as percentage, of the yield of sound corn for that entry to the average yield of sound corn for all the entries on the field.

**General Performance.** In computing the general-performance rating of an entry, the ratings for erect plants and sound corn were averaged, but the sound-corn rating was given three times the weight of the rating for erect plants. When two or more entries tied in the general-performance rating, the ties were given the same numerical ranking, but they were listed in the order of their descending yield of sound corn. If the two entries had the same yield of sound corn, then they were listed on the basis of total corn.

**Chance Differences.** Too much confidence must not be placed in the exact ranking of a hybrid in the following tables, for chance has played a part in determining the placing of many of them. Unmeasured differences in soil and in prevalence of insects and diseases, and unaccountable variability in stand will cause differences in yield that are not inherent in the hybrids or varieties.

The part played by chance in the 1939 tests has been calculated by the mathematical procedure known as "analysis of variance." At the bottom or side of each table is stated the approximate difference

which there must be in the 1939 yields to show a true inherent difference between any two entries. Unless this difference exists there is no assurance that one entry is inherently higher yielding than the other.

*Readers are urged to note the difference necessary for significance, as shown for each test field, and to keep that difference constantly in mind in all comparisons of entries on that field.*

## RESULTS OF 1939 PERFORMANCE TESTS

**Northeastern.** At Libertyville 51 of the 54 hybrids exceeded the general-performance rating of the best open-pollinated variety. The five best hybrids produced an average of 15.9 more bushels of sound corn than the average of the five open-pollinated varieties, while the five poorest hybrids averaged only 1.2 more bushels of sound corn an acre. In lodging resistance the five best hybrids were much better than the open-pollinated varieties, averaging 13.4 more erect plants per hundred; and the five poorest hybrids were better by 10 plants per hundred. The field was harvested October 12, a very early date for the region, but owing to the dry weather during the latter part of the season the corn averaged only 16.9 percent moisture content, with a range from 20.1 percent to 12.9 percent.

**Northern.** On the Kings field the five best hybrids exceeded the five open-pollinated varieties by an average of 23.8 bushels of sound corn an acre and 20.8 erect plants per hundred. The five poorest hybrids outyielded the five open-pollinated varieties by an average of 5.3 bushels of sound corn an acre and were much more resistant to lodging, having 18.4 more erect plants per hundred. These differences in favor of the five poorest hybrids were larger than those on any of the other test fields, and would seem to indicate that the hybrids were, as a whole, better adapted to this field than they were to the other fields. Fifty-four of the 55 hybrids on this field had a higher general-performance rating than any open-pollinated variety.

**West North-Central.** The average production of all entries on the Cambridge field was 114.4 bushels of sound corn an acre, the best yield for any field in the six years of the Illinois corn-performance tests. This field is also credited with the highest yielding individual entry, the best hybrid producing 129.3 bushels of sound corn an acre. With these high yields the five best hybrids surpassed the five open-pollinated varieties by an average of 27.6 bushels of sound corn an acre and they had 17.6 more erect plants per hundred. The five poorest hybrids exceeded the open-pollinated varieties by an average of 2.4 bushels of sound corn an acre and 9.8 erect plants per hundred. Sixty-nine of the 70 hybrids in the test exceeded the average general performance of the open-pollinated varieties.

**East North-Central.** On the Reddick field 65 of the 68 hybrids in the test had higher general-performance ratings than the average of the open-pollinated varieties, and 61 hybrids had higher ratings than any individual open-pollinated variety. The five best hybrids outyielded the open-pollinated varieties by an average of 16.0 bushels of sound corn an acre and had 11.6 more erect plants per hundred. The five poorest hybrids averaged 2 bushels less of sound corn an acre than the open-pollinated varieties and had 1.4 fewer erect plants per hundred. Corn on this field matured very early and had very little moisture when harvested.

**West Central.** On the Littleton field the five best hybrids averaged 15.6 bushels more of sound corn an acre than the open-pollinated varieties, and the five poorest hybrids averaged 5.5 bushels less than the open-pollinated varieties. Both the five best hybrids and the five poorest hybrids surpassed the open-pollinated varieties in lodging resistance, the hybrids having 17.6 and 10.8 more erect plants per hundred respectively. Sixty-four of the hybrids had a higher general-performance rating than the average of the open-pollinated varieties.

**East Central.** The Paxton field had 68 hybrids with higher general-performance ratings than the average of the open-pollinated varieties. The five best hybrids outyielded the open-pollinated varieties by an average of 15.6 bushels of sound corn an acre, and were much more resistant to lodging, having 14.6 more erect plants per hundred. The open-pollinated varieties, however, outyielded the five poorest hybrids by an average of 3.7 bushels of sound corn an acre, tho they were not nearly so resistant to lodging, having 15 fewer erect plants per hundred. Some of the entries on this field were badly damaged by *Diplodia* ear rot.

**South Central.** Along with the higher yield that was produced on the Sullivan field in 1939 compared with 1938, more hybrids had higher general-performance ratings than the average of the open-pollinated varieties—51 hybrids in 1939 against only 26 in 1938. The five best hybrids averaged 14.2 more bushels of sound corn an acre than the average of the open-pollinated varieties, while the five poorest hybrids averaged 5.8 bushels less. In lodging resistance the five best hybrids were superior to the open-pollinated varieties, averaging 12.9 more erect plants per hundred; the five poorest hybrids had a better average by 9 plants.

**Southern.** In the 1938 tests at Shobonier the open-pollinated varieties clearly surpassed the hybrids, but in 1939 this situation was completely reversed, the five best hybrids averaging better than the six open-pollinated varieties by 12.2 bushels of sound corn an acre, and the five poorest hybrids averaging better by 1.3 bushels. Also in resistance to lodging, both the five best and the five poorest hybrids averaged





**Two types of lodging on the test fields**

*Left*, lodging caused by *Diplodia* stalk rot near the base of the plant. *Right*, lodging caused by stalk breaking below the ear of the plant.

better than the open-pollinated varieties, each group of hybrids having 5.7 more erect plants per hundred. The greater superiority of the hybrids over the open-pollinated varieties in 1939 was due in part to the more favorable growing conditions of 1939. Both hybrids and open-pollinated varieties had higher percentages of erect plants in 1939 than in 1938.

**Southeastern.** On the Albion field 46 of the 48 hybrids in the test had a higher general-performance rating than the average of the open-pollinated varieties. The five best hybrids outyielded the open-pollinated varieties by an average of 13.1 bushels of sound corn an acre, while the five poorest hybrids produced 1.6 bushels less than the open-pollinated varieties. In lodging resistance the five best hybrids and the five poorest hybrids were superior to the open-pollinated corn, averaging respectively 6.0 and 5.8 more erect plants per hundred. Considerable rootworm damage occurred on this field; and had there been rain with strong wind during the last part of the season there would have been considerable lodging of plants.

**Southwestern.** At Modoc the five best hybrids outyielded the open-pollinated varieties by an average of 20.6 bushels of sound corn an acre and the five poorest hybrids outyielded the open-pollinated varieties by 2.8 bushels. In lodging resistance the five best hybrids were superior to the open-pollinated varieties, averaging 7.2 more erect plants per hundred; the five poorest hybrids were superior by 4 plants per hundred. In general-performance rating 51 of the 52 hybrids in the test exceeded the average of the open-pollinated varieties.

## FOUR-, THREE-, AND TWO-YEAR SUMMARIES

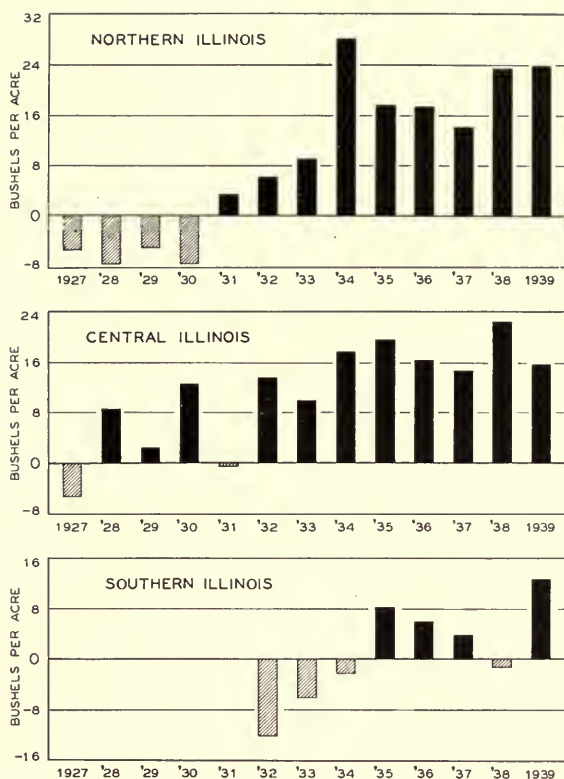
One obstacle in the corn-improvement program is the tendency for commercial producers of hybrid seed corn to base their evaluations of some inbred combinations on too limited tests. More thorough testing through several seasons will later disclose weaknesses that were not apparent in the more limited tests. Obviously then the more seasons through which a corn has been tested, the more certain a grower can be of its value. The tables giving the yield and performance of entries that have been included in these tests for two or more years are therefore of special interest. Such a table for each field except Modoc follows immediately after the table giving the 1939 results for the field.

Because of the rapid introduction of new hybrids and the dropping of less desirable ones, there are relatively few entries in the four-year summaries and this of course lessens their value. To get the most out of these data the four- and three-year averages will have to be studied along with the two-year and current year's results.

For seven of the ten fields operated in 1939 four-year summaries are presented. For nine fields both three-year and two-year averages are available. Data obtained in 1939 from the Modoc field in extreme southwestern Illinois are not averaged with those obtained at Golconda and Elizabethtown in 1937 and 1938 because of the widely different soil and climatic conditions represented by these two fields—Modoc being in the Mississippi valley and the other two in the Ohio valley.



One of the goals toward which plant breeders have been working  
This particular plot on the Paxton field stood 100 percent.



#### Differences between yields of hybrids and open-pollinated varieties 1927-1939

The above bars show the amounts by which the yields of the five best hybrids have exceeded (*black*) or have fallen below (*crosshatch*) the five best open-pollinated varieties, in three sections of Illinois.

A further summarizing of the four-year, three-year, and two-year data for nine fields is shown in Table 17 (page 215). On most fields the four-year average yield of sound corn by the hybrid entries exceeded that of the open-pollinated varieties by a greater margin than did the hybrids that have been tested for the past two or three years only. On the northern and west north-central fields the average superiority of the hybrid yields over the open-pollinated yields in the four-year period was a little less than the corresponding figure for the three-year and two-year averages. The differences, however, were only slight. Thus even tho a few hybrids in the shorter-term averages may be superior to those in the four-year tests, it is evident that those in the four-year tests are not only high yielding but consistent in performance.

## CONTRIBUTORS OF SEED FOR THE 1939 TESTS

<i>Entry</i>	<i>Contributor</i>	<i>Address</i>
Bear Hybrids.....	A. Linn Bear.....	Decatur
Beckerle Yellow Dent.....	Elmer Beckerle.....	Columbia
Blackhawk.....	Otto Kreutzberg.....	Alhambra
Bunning White Dent.....	Henry Bunning.....	Moweaqua
Canterbury Yellow Dent.....	C. E. Canterbury.....	Cantrall
Champion White Pearl.....	F. V. Wilson & Son.....	Edgewood
Crow Hybrids.....	Crow Hybrid Corn Co.....	Milford
DeKalb Hybrids.....	DeKalb Agr. Assoc.....	DeKalb
Doubet Yellow Dent.....	E. W. Doubet.....	Hanna City
E. W. Doubet Hybrids.....	E. W. Doubet.....	Hanna City
Funk Hybrids.....	Funk Bros. Seed Co.....	Bloomington
Furr Hybrid 77.....	Kenneth Furr.....	Genoa
Gunn Western Plowman.....	DeKalb Agr. Assoc.....	DeKalb
Hahn Hybrids.....	Hahn Seed Company.....	Dwight
Hoosier Crost Hybrids.....	Ed. J. Funk & Sons.....	Kentland, Ind.
Huebsch-Murdock.....	L. A. Huebsch & Son.....	Mundelein
Hunt White Dent.....	Chester A. Hunt.....	Morris
I.H.P. Hybrids (except 333 and 420).....	Ind. Hyb. Prod. of Ill., Inc.....	Pekin
I.H.P. Hybrid 333.....	L. A. Huebsch & Son.....	Mundelein
I.H.P. Hybrid 420.....	Huey Seed Company.....	Carthage
Illinois Hybrids 99, 387.....	L. A. Huebsch & Son.....	Mundelein
Illinois Hybrid 126.....	Harold Oakes.....	Bluffs
Illinois Hybrids 200, 201, 208, 805, 838, 972, 976.....	Charles Holmes.....	Edelstein
Illinois Hybrids 200, 784, 960.....	Geo. Pfeifer.....	Arcola
Illinois Hybrids 200, 885A.....	Thomas Henley.....	Arcola
Illinois Hybrids 206, 499, 582, 863.....	Burrus Bros.....	Arenzville
Illinois Hybrids 219, 1092.....	Nichols Bros.....	Hebron
Illinois Hybrids 374, 944, 972.....	Sibley Farms.....	Sibley
Illinois Hybrids 432, 877.....	John H. Livengood.....	Atwood
Illinois Hybrids 448, 450, 499, 863.....	Myron Whisnand.....	Arcola
Illinois Hybrid 571.....	Charles Mosgrove.....	Mansfield
Illinois Hybrids 582, 960.....	Producers' Crop Improve- ment Association.....	Piper City
Illinois Hybrid 614.....	C. E. Canterbury.....	Cantrall
Illinois Hybrid 710.....	Nickel Bros.....	Concord
Illinois Hybrids 751, 960.....	L. A. Sass.....	Ancona
	U. G. Sass.....	Streator
Illinois Hybrid 936.....	Mohr Bros.....	East Moline
Illinois Hybrid 944.....	Harry Johnston.....	Danvers
Illinois Hybrid 947.....	Harry Koch.....	Bluffs
Iowa Hybrid 3342.....	Nickel Bros.....	Concord
Ioweaith Hybrids.....	Michael-Leonard Seed Co.....	Chicago
Kelly Hybrids.....	Kelly Seed Co.....	San Jose
Krug.....	Krug Bros.....	Minonk
Leaming.....	H. C. Neville.....	Harrisburg
Maland Yellow Dent.....	John Maland.....	Leland
Mangelsdorf Hybrid XX-1.....	Ed. Mangelsdorf & Bros., Inc.....	St. Louis, Mo.
McKeighan Yellow Dent.....	J. L. McKeighan.....	Yates City
McLurkin White Dent.....	Theodore Brown.....	Coulterville
Miller Hybrid 470.....	Bert A. Miller.....	Forrest
M-L Hybrids.....	B. E. Moews.....	Granville
	L. L. Lowe.....	Aroma Park
Mohawk.....	Martin Schaeffer.....	Hoyleton
Moore Yellow Dent.....	Illinois Station.....	Urbana
Morgan Hybrids.....	Morgan Bros.....	Galva
Mountjoy Hybrids.....	Oscar Mountjoy.....	Atlanta
Mountjoy Utility Dent.....	Oscar Mountjoy.....	Atlanta
National Hybrids.....	Joe Brooks.....	Forreston



## Contributors of Seed for the 1939 Tests—(Concluded)

Null Hybrids.....	Null Seed Farms.....	Colchester
Null-Vollmer Hybrids.....	L. H. Vollmer.....	Liberty
Pfister Hybrids.....	Associated Pfister Growers.....	Geneseo
Pfister-Lazier Hybrids.....	Lazier Seed Company.....	Rochelle
	Northern Seed Company.....	Garden Prairie
Pioneer Hi-Breds.....	Pioneer Hi-Bred Corn Co.....	Princeton
Rice White Dent.....	J. R. Rice.....	Blue Mound
Roeschley Yellow Dent.....	Leo Roeschley.....	Graymont
Sass Hybrids.....	L. A. Sass & Son.....	Ancona
	U. G. Sass.....	Streator
Sager Hybrid 33A(W).....	Troy Sager.....	Kell
Seeber Hybrids.....	Seeber Bros.....	Champaign
Shuman Golden Beauty.....	Charles Shuman.....	Sullivan
Sibley Farm Hybrids.....	Sibley Farms.....	Sibley
Sommer Yellow Dent.....	Geo. Pfeifer.....	Arcola
St. Charles White.....	E. H. Isenberg.....	Kauffman
Station Yellow Dent.....	Illinois Station.....	Urbana
Stelford's White Cap.....	H. J. Stelford.....	Hampshire
Stiegelmeier Hybrids.....	H. L. Stiegelmeier.....	Normal
U. S. Hybrid 5.....	Oscar Mountjoy.....	Atlanta
U. S. Hybrid 13.....	Thomas Henley.....	Arcola
U. S. Hybrids 13, 35.....	Charles Holmes.....	Edelstein
U. S. Hybrids 13, 35, 44, 63.....	Producers' Crop Improve- ment Association.....	Piper City
U. S. Hybrid 14.....	H. H. Ferris.....	Princeton
U. S. Hybrid 35.....	Huey Seed Co.....	Carthage
U. S. Hybrids 35, 44.....	U. G. Sass.....	Streator
U. S. Hybrids 35, 45.....	L. A. Sass & Son.....	Ancona
U. S. Hybrid 44.....	Carl Frey.....	Gilman
U. S. Hybrid 44.....	B. E. Moews.....	Granville
	L. L. Lowe.....	Aroma Park
U. S. Hybrid 44.....	Morgan Bros.....	Galva
Waddell Utility Dents.....	Elmer Waddell.....	Taylorville
Webb Will County Favorite.....	Russell Webb.....	Plainfield
Wilson Yellow Dent.....	Edward Wilson.....	Winchester
Wisconsin Hybrids.....	Wis. Agr. Exp. Sta.....	Madison, Wis.

## PEDIGREES OF ILLINOIS, U. S., AND IOWA HYBRIDS

Ill. 99.....(CC5 x CC7) (WF9 x CC1)	Ill. 784.....(Hy x 5120) (K4 x 317)
Ill. 126.....(WF9 x 38-11) (Tr x 317)	Ill. 805.....(187-2 x 38-11) (K4 x 317)
Ill. 200.....(WF9 x 38-11) (K4 x 317)	Ill. 838.....(38-11 x Pr) (K4 x 317)
Ill. 201.....(WF9 x 38-11) (187-2 x 317)	Ill. 863.....(R4 x Hy) (K4 x 317)
Ill. 206.....(WF9 x 38-11) (5120 x 317)	Ill. 877.....(R4 x Pr) (K4 x 317)
Ill. 208.....(B2 x 38-11) (K4 x 317)	Ill. 885A.....(R4 x 38-11) (K4 x 317)
Ill. 219.....(CC5 x CC7) (WF9 x Hy)	Ill. 936.....(A x Hy) (90 x 317)
Ill. 246.....(WF9 x Hy) (187-2 x 317)	Ill. 944.....(Hy x WF9) (R4 x 317)
Ill. 247.....(187-2 x 38-11) (Hy x 317)	Ill. 947.....(R4 x Pr) (Tr x 317)
Ill. 374.....(R4 x Hy) (187-2 x 317)	Ill. 972.....(WF9 x Hy) (701 x 317)
Ill. 387.....(CC5 x CC7) (R4 x Hy)	Ill. 976.....(R4 x WF9) (Hy x 540)
Ill. 432.....(5120 x 4211) (K4 x 317)	Ill. 960.....(R4 x Hy) (701 x 317)
Ill. 448.....(38-11 x Kys) (K4 x 317)	Ill. 1092.....(A x 90) (WF9 x CC1)
Ill. 450.....(R4 x Kys) (K4 x 317)	U. S. 5.....(R4 x 317) (WF9 x 38-11)
Ill. 499.....(Hy x 5120) (701 x 317)	U. S. 13.....(Hy x 317) (WF9 x 38-11)
Ill. 566.....(187-2 x Hy) (K4 x 317)	U. S. 14.....(Hy x 317) (WF9 x R4)
Ill. 571.....(Tr x 90) (Hy x 540)	U. S. 35.....(R4 x Hy) (WF9 x 38-11)
Ill. 582.....(R4 x 317) (Hy x 540)	U. S. 44.....(4-8 x 187-2) (Hy x 540)
Ill. 614.....(Tr x 5120) (701 x 317)	U. S. 45.....(461-3 x 4-8) (Hy x 540)
Ill. 710.....(R4 x Hy) (Tr x 317)	U. S. 63.....(R4 x WF9) (Hy x 540)
Ill. 751.....(A x 90) (WF9 x Hy)	Iowa 3342... (701 x 317) (345 x 401)

Table 4.—NORTHEASTERN ILLINOIS: Libertyville

Rank	Entry	Acre-yield.		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
1939		bu.	bu.	perct.	perct.	perct.	perct.	perct.	
1	*M-L Hybrid 13 (Moews-Lowe) . . . . .	74.6	74.6	.05	18.5	100	103.8	114.0	111.5
2	DeKalb Hybrid 240. . . . .	74.0	74.0	.03	13.8	96	99.6	113.1	109.7
3	DeKalb Hybrid 421. . . . .	72.6	72.6	.05	15.7	100	103.8	111.0	109.2
4	Illinois Hybrid 972 (Holmes) . . . . .	72.0	71.9	.08	19.0	99	102.7	109.9	108.1
5	Pf.-Laz. Hyb. 374 (Northern Seed Co.) . .	71.2	71.2	.05	16.5	98	101.7	108.8	107.0
6	*Wisconsin Hybrid 645. . . . .	70.2	70.0	.28	15.2	100	103.8	107.0	106.2
7	*Wisconsin Hybrid 696. . . . .	70.1	70.0	.13	15.8	98	101.7	107.0	105.7
8	Pf.-Laz. Hyb. 371 (Northern Seed Co.) . .	69.8	69.6	.26	18.5	99	102.7	106.4	105.5
9	DeKalb Hybrid 404A . . . . .	69.4	69.2	.31	16.0	100	103.8	105.8	105.3
10	*Illinois Hybrid 99 (Huebsch) . . . . .	69.0	68.8	.26	15.8	100	103.8	105.2	104.9
11	Pioneer Hi-Bred 330 . . . . .	69.2	68.3	1.33	17.5	99	102.7	104.4	104.0
12	DeKalb Hybrid 225. . . . .	69.0	68.7	.42	16.4	97	100.6	105.0	103.9
13	*Funk Hybrid G-18 . . . . .	68.7	68.5	.31	16.9	97	100.6	104.7	103.7
13	*I.H.P. Hybrid 122 . . . . .	68.5	68.3	.25	19.8	98	101.7	104.4	103.7
15	Funk Hybrid G-12 . . . . .	68.3	67.8	.80	16.6	99	102.7	103.6	103.4
16	DeKalb Hybrid 433. . . . .	67.9	67.7	.26	15.8	99	102.7	103.5	103.3
17	M-L Hybrid 15 (Moews-Lowe) . . . . .	67.6	67.6	0	18.2	99	102.7	103.3	103.2
18	*I.H.P. Hybrid 666 . . . . .	67.6	67.5	.12	17.3	99	102.7	103.2	103.1
19	Funk Hybrid G-15 . . . . .	67.9	67.8	.12	17.3	97	100.6	103.6	102.9
20	Iowaleth Hybrid A . . . . .	67.6	67.5	.13	16.1	98	101.7	103.2	102.8
20	*Illinois Hybrid 219 (Nichols Bros.) . . .	67.2	67.0	.23	18.5	100	103.8	102.4	102.8
22	DeKalb Hybrid 204. . . . .	67.4	67.2	.24	16.9	99	102.7	102.7	102.7
23	Pf.-Laz. Hyb. 368 (Northern Seed Co.) . .	67.9	67.8	.08	20.1	96	99.6	103.6	102.6
23	Funk Hybrid G-114. . . . .	67.0	66.9	.09	18.8	100	103.8	102.2	102.6
25	*Wisconsin Hybrid 531. . . . .	67.3	67.2	.18	14.2	98	101.7	102.7	102.5
26	Pioneer Hi-Bred 324. . . . .	68.1	68.1	.04	14.8	93	96.5	104.1	102.2
26	Pioneer Hi-Bred 322. . . . .	67.6	67.0	.83	16.5	98	101.7	102.4	102.2
28	DeKalb Hybrid 201. . . . .	68.1	67.8	.41	15.2	94	97.5	103.6	102.1
28	Pioneer Hi-Bred 355. . . . .	67.0	66.4	.92	12.9	100	103.8	101.5	102.1
30	DeKalb Hybrid 493. . . . .	68.1	67.9	.35	14.9	93	96.5	103.8	102.0
31	National Hybrid 112 (Brooks) . . . . .	66.3	66.3	0	17.9	100	103.8	101.3	101.9
32	*I.H.P. Hybrid D1. . . . .	65.5	65.4	.14	19.4	99	102.7	100.0	100.7
33	Pf.-Laz. Hyb. 366 (Northern Seed Co.) . .	66.3	66.2	.18	18.8	95	98.6	101.2	100.6
33	*Funk Hybrid G-16 . . . . .	65.2	65.1	.19	15.7	100	103.8	99.5	100.6
35	*M-L Hybrid 11 (Moews-Lowe) . . . . .	65.4	65.3	.20	16.0	99	102.7	99.8	100.5
36	Pioneer Hi-Bred 349. . . . .	65.4	65.0	.58	14.8	97	100.6	99.3	99.6
36	Iowaleth Hybrid 12. . . . .	65.2	65.0	.28	17.3	97	100.6	99.3	99.6
38	DeKalb Hybrid 498. . . . .	64.6	64.5	.17	19.8	98	101.7	98.6	99.4
39	Funk Hybrid G-27. . . . .	65.0	64.8	.24	17.1	96	99.6	99.0	99.2
40	Pioneer Hi-Bred 335. . . . .	64.9	64.5	.54	14.9	97	100.6	98.6	99.1
41	Funk Hybrid G-30 . . . . .	64.4	64.4	0	16.9	97	100.6	98.4	99.0
42	*Funk Hybrid G-532(W) . . . . .	65.1	64.9	.28	13.8	93	96.5	99.2	98.5
43	*Funk Hybrid G-14 . . . . .	64.8	64.6	.26	17.9	94	97.5	98.7	98.4
44	National Hybrid 110A (Brooks) . . . . .	64.1	64.0	.10	15.5	96	99.6	97.8	98.3
45	*Illinois Hybrid 976 (Holmes) . . . . .	63.3	63.1	.27	17.3	98	101.7	96.4	97.7
46	Illinois Hybrid 1092 (Nichols Bros.) . . .	62.5	62.4	.21	16.9	98	101.7	95.4	97.0
47	Iowaleth Hybrid AQF . . . . .	62.2	61.4	1.22	16.3	98	101.7	93.8	95.8
47	*I.H.P. Hybrid 211 . . . . .	61.6	61.4	.32	17.9	98	101.7	93.8	95.8
49	Iowaleth Hybrid 10. . . . .	60.7	60.7	.06	15.7	96	99.6	92.8	94.5
50	*I.H.P. Hybrid D2 . . . . .	60.5	60.4	.13	19.9	97	100.6	92.3	94.4
51	Pioneer Hi-Bred 352. . . . .	59.8	59.7	.22	16.6	96	99.6	91.2	93.3
52	Huebsch-Murdock Yellow Dent. . . . .	61.3	61.2	.14	15.5	85	88.2	93.5	92.2
53	*Illinois Hybrid 387 (Huebsch) . . . . .	58.6	58.2	.60	17.9	94	97.5	89.0	91.1
54	Stelford's White Cap . . . . .	60.8	60.5	.57	16.2	80	83.0	92.5	90.1
55	*I.H.P. Hybrid 333 (Huebsch) . . . . .	56.8	56.6	.33	23.0	96	99.6	86.5	89.8
56	*Wisconsin Hybrid 606. . . . .	56.1	55.9	.33	15.8	93	96.5	85.4	88.2
57	Maland Yellow Dent . . . . .	56.8	56.6	.34	18.3	88	91.3	86.5	87.7
●	Average of 5 open-pollinated varieties . .	57.2	57.0	.31	16.7	85.2	88.4	87.1	87.4
58	Gunn Western Plowman . . . . .	54.5	54.4	.20	15.7	90	93.4	83.1	85.7
59	Webb Will County Favorite . . . . .	52.4	52.3	.28	17.9	83	86.1	79.9	81.5
Average of all entries . . . . .		65.6	65.4	.29	16.9	96.5	....	....	....

\*Less than 5 bushels of seed sampled.

A difference of less than 8.6 bushels between total yields  
of any two entries in this table is not significant.

Table 4A.—Two-, Three-, and Four-Year Summaries at Libertyville, Northeastern Illinois

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
Average yield of entries grown in 1936, 1937, 1938, 1939									
		<i>bu.</i>	<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	
1	DeKalb Hybrid 421.....	70.8	70.5	.37	25.7	89.1	109.4	114.1	112.9
2	DeKalb Hybrid 433.....	65.2	64.9	.39	25.4	86.6	106.3	105.1	105.4
3	DeKalb Hybrid 493.....	65.0	64.4	.91	25.5	84.9	104.2	104.3	104.3
4	Funk Hybrid G-30.....	63.8	63.3	.81	28.6	86.9	106.7	102.5	103.6
5	Gunn Western Plowman.....	56.5	56.1	.72	25.4	72.6	89.1	90.8	90.4
●	Average of 5 open-pollinated varieties.....	<b>55.2</b>	<b>54.7</b>	<b>.96</b>	<b>26.1</b>	<b>70.0</b>	<b>85.9</b>	<b>88.6</b>	<b>87.9</b>
6	Huebsch-Murdock Yellow Dent.....	51.8	51.4	.79	24.4	68.6	84.2	83.2	83.5
	Average of all entries.....	62.2	61.8	.67	25.8	81.5	....	....	....
Average yield of entries grown in 1937, 1938, 1939									
1	DeKalb Hybrid 421.....	71.3	71.2	.25	22.3	93.7	107.5	112.5	111.3
2	Funk Hybrid G-27.....	70.1	70.0	.15	22.5	91.5	104.9	110.6	109.2
3	DeKalb Hybrid 204.....	67.1	67.0	.19	23.4	94.8	108.7	105.8	106.5
4	DeKalb Hybrid 433.....	65.6	65.3	.45	21.7	91.0	104.4	103.2	103.5
5	Funk Hybrid G-30.....	64.8	64.5	.48	24.2	93.7	107.5	101.9	103.3
6	DeKalb Hybrid 493.....	65.9	65.2	1.04	22.5	88.5	101.5	103.0	102.6
7	DeKalb Hybrid 498.....	63.0	62.7	.42	25.6	92.8	106.4	99.1	100.9
8	Gunn Western Plowman.....	58.4	58.2	.33	21.2	79.8	91.5	91.9	91.8
9	Maland Yellow Dent.....	58.2	57.8	.82	24.6	79.5	91.2	91.3	91.3
●	Average of 5 open-pollinated varieties.....	<b>58.2</b>	<b>57.8</b>	<b>.65</b>	<b>22.6</b>	<b>77.5</b>	<b>88.9</b>	<b>91.3</b>	<b>90.7</b>
10	Huebsch-Murdock Yellow Dent.....	58.0	57.8	.49	18.7	75.5	86.6	91.3	90.1
11	Webb Will County Favorite.....	56.7	56.2	1.09	24.7	78.3	89.8	88.8	89.1
	Average of all entries.....	63.6	63.3	.52	22.9	87.2	....	....	....
Average yield of entries grown in 1938 and 1939									
1	DeKalb Hybrid 421.....	73.0	72.9	.26	21.9	98.5	102.8	109.4	107.8
2	DeKalb Hybrid 404A.....	72.4	72.2	.29	22.5	99.0	103.3	108.3	107.1
3	Funk Hybrid G-114.....	71.9	71.7	.25	25.4	99.8	104.2	107.6	106.8
4	Pioneer Hi-Bred 349.....	72.7	72.0	.92	21.9	96.8	101.0	108.0	106.3
5	Funk Hybrid G-12.....	71.3	70.8	.73	22.8	98.8	103.1	106.2	105.4
6	Pioneer Hi-Bred 322.....	71.2	70.0	1.64	22.3	97.5	101.8	105.0	104.2
7	Funk Hybrid G-15.....	69.3	69.1	.31	23.2	97.8	102.1	103.7	103.3
8	Funk Hybrid G-27.....	68.5	68.4	.22	22.6	97.8	102.1	102.6	102.5
9	DeKalb Hybrid 493.....	69.6	69.0	.85	21.0	94.8	98.9	103.5	102.4
10	Funk Hybrid G-30.....	68.2	68.1	.13	23.5	97.0	101.2	102.2	102.0
11	Pioneer Hi-Bred 335.....	68.0	67.3	.89	22.0	98.0	102.3	101.0	101.3
12	DeKalb Hybrid 204.....	67.1	66.9	.29	23.5	98.3	102.6	100.4	101.0
13	DeKalb Hybrid 433.....	67.1	66.8	.41	20.9	97.0	101.2	100.2	100.5
14	Iowalth Hybrid AQF.....	66.4	65.7	1.05	23.2	98.5	102.8	98.6	99.7
15	National Hybrid 112.....	65.2	65.2	.10	23.0	99.3	103.6	97.8	99.3
16	Iowalth Hybrid 12.....	65.7	65.3	.52	22.7	98.0	102.3	98.0	99.1
17	Iowalth Hybrid A.....	65.8	65.5	.52	20.1	95.5	99.7	98.3	98.7
18	DeKalb Hybrid 498.....	65.0	64.8	.40	25.4	97.8	102.1	97.2	98.4
19	Iowalth Hybrid 10.....	65.3	65.1	.32	20.4	95.8	100.0	97.7	98.3
20	Maland Yellow Dent.....	61.2	61.0	.36	23.4	89.3	93.2	91.5	91.9
●	Average of 5 open-pollinated varieties.....	<b>59.7</b>	<b>59.4</b>	<b>.45</b>	<b>22.2</b>	<b>86.2</b>	<b>90.0</b>	<b>89.1</b>	<b>89.3</b>
21	Gunn Western Plowman.....	58.3	58.1	.34	21.4	87.8	91.6	87.2	88.3
22	Webb Will County Favorite.....	58.8	58.8	.14	23.5	84.5	88.2	88.2	88.2
23	Huebsch-Murdock Yellow Dent.....	58.6	58.2	.73	20.3	86.3	90.1	87.3	88.0
	Average of all entries.....	67.0	66.6	.51	22.5	95.8	....	....	....

Table 5.—NORTHERN ILLINOIS: Kings

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
1939		bu.	bu.	perct.	perct.	perct.	perct.	perct.	
1	*I.H.P. Hybrid 66.....	97.3	97.1	.18	16.5	99	104.0	111.0	109.3
2	*Hahn Hybrid 150.....	98.6	96.7	1.88	17.4	98	102.9	110.6	108.7
3	*Illinois Hybrid 976 (Holmes).....	97.5	97.4	.09	16.9	92	96.6	111.4	107.7
4	Pioneer Hi-Bred 314.....	95.4	95.1	.30	14.7	99	104.0	108.7	107.5
5	*Pister Hybrid 260.....	95.9	95.6	.29	16.4	95	99.8	109.3	106.9
6	Furr Hybrid 77.....	93.6	93.3	.31	16.9	98	102.9	106.7	105.8
7	U. S. Hybrid 35 (Holmes).....	93.0	92.7	.37	15.9	100	105.0	106.0	105.8
8	DeKalb Hybrid 615.....	92.6	92.6	.02	16.5	100	105.0	105.9	105.7
9	*Pioneer Hi-Bred 331.....	93.4	92.5	.95	16.4	100	105.0	105.8	105.6
10	Pioneer Hi-Bred 307.....	93.3	92.3	1.03	16.2	100	105.0	105.5	105.4
11	Illinois Hybrid 751 (U. G. Sass).....	92.0	92.0	0	17.0	99	104.0	105.2	104.9
12	*Bear Hybrid OK-41.....	92.7	92.7	.05	15.1	96	100.8	106.0	104.7
13	*M.-L. Hybrid 13 (Moews-Lowe).....	91.7	91.5	.25	16.4	100	105.0	104.6	104.7
14	Pf.-Laz. Hyb. 371 (Lazier Seed Co.).....	91.9	91.7	.25	16.4	98	102.9	104.9	104.4
15	Pf.-Laz. Hyb. 368 (Lazier Seed Co.).....	92.3	92.1	.18	16.9	96	100.8	105.3	104.2
16	Pioneer Hi-Bred 330.....	90.8	90.8	.05	18.4	100	105.0	103.8	104.1
17	Pioneer Hi-Bred 324.....	93.0	91.8	1.27	15.9	95	99.8	105.0	103.7
18	*Funk Hybrid G-37.....	91.9	90.2	1.83	16.0	100	105.0	103.1	103.6
19	Pf.-Laz. Hyb. 374 (Lazier Seed Co.).....	90.9	90.7	.18	14.3	97	101.9	103.7	103.3
20	DeKalb Hybrid 404A.....	91.1	89.9	1.28	16.1	99	104.0	102.8	103.1
21	DeKalb Hybrid 444.....	90.0	89.6	.49	16.1	99	104.0	102.5	102.9
22	National Hybrid 116 (Brooks).....	89.9	89.8	.16	16.3	98	102.9	102.7	102.8
23	*Funk Hybrid G-22.....	90.4	90.1	.28	14.4	97	101.9	103.0	102.7
24	Funk Hybrid G-114.....	89.4	89.2	.25	16.9	99	104.0	102.0	102.5
25	*I.H.P. Hybrid D3.....	90.0	88.9	1.26	17.7	100	105.0	101.7	102.5
26	DeKalb Hybrid 422.....	90.5	90.1	.44	15.5	95	99.8	103.0	102.2
27	Pioneer Hi-Bred 349.....	90.0	89.5	.60	14.3	97	101.9	102.3	102.2
28	Pioneer Hi-Bred 322.....	90.7	89.2	1.61	15.3	98	102.9	102.0	102.2
29	DeKalb Hybrid 421.....	93.3	91.1	2.32	15.7	91	95.6	104.2	102.1
30	Pf.-Laz. Hyb. 366 (Lazier Seed Co.).....	91.9	90.9	1.11	16.4	91	95.6	103.9	101.8
31	Moews Hybrid 10 (Moews-Lowe).....	89.9	89.6	.35	16.1	95	99.8	102.5	101.8
32	Ioweth Hybrid 16.....	88.4	88.4	0	15.9	99	104.0	101.1	101.8
33	M.-L. Hybrid 15 (Moews-Lowe).....	89.8	88.6	1.30	15.9	98	102.9	101.3	101.7
34	Ioweth Hybrid AQF.....	87.9	87.9	0	14.8	100	105.0	100.5	101.6
35	M.-L. Hybrid 14 (Moews-Lowe).....	88.2	87.8	.45	15.9	100	105.0	100.4	101.6
36	Ioweth Hybrid AQ.....	88.3	88.1	.22	15.6	99	104.0	100.7	101.5
37	National Hybrid 117 (Brooks).....	88.8	88.4	.44	15.2	97	101.9	101.1	101.3
38	DeKalb Hybrid 433.....	91.4	88.4	3.24	15.3	95	99.8	101.1	100.8
39	*Morgan Hybrid 106A.....	88.3	88.3	0	16.0	93	97.7	101.0	100.2
40	Ioweth Hybrid 25.....	88.8	86.9	2.17	15.3	96	100.8	99.4	99.8
41	*I.H.P. Hybrid D4.....	87.8	86.7	1.27	17.2	95	99.8	99.1	99.3
42	Funk Hybrid G-30.....	86.2	86.0	.29	16.5	97	101.9	98.3	99.2
43	DeKalb Hybrid 430.....	85.9	85.7	.23	15.4	98	102.9	98.0	99.2
44	*Illinois Hybrid 219 (Nichols Bros.).....	85.7	85.0	.81	16.1	100	105.0	97.2	99.2
45	Funk Hybrid G-15.....	86.4	84.5	2.20	17.2	100	105.0	96.6	98.7
46	Illinois Hybrid 1092 (Nichols Bros.).....	85.3	85.3	0	17.8	97	101.9	97.5	98.6
47	*Morgan Hybrid 52.....	86.9	86.4	.56	16.9	93	97.7	98.8	98.5
48	*Morgan Hybrid 32.....	84.9	84.7	.21	15.5	97	101.9	96.9	98.2
49	Funk Hybrid G-19.....	86.4	85.6	.88	17.5	94	98.7	97.9	98.1
50	DeKalb Hybrid 604.....	85.5	85.1	.48	17.7	94	98.7	97.3	97.7
51	Funk Hybrid G-27.....	84.1	83.1	1.18	14.9	99	104.0	95.0	97.3
52	*Illinois Hybrid 387 (Huebsch).....	83.9	82.1	2.16	14.6	96	100.8	93.9	95.6
53	*Morgan Hybrid 42.....	81.1	81.1	0	17.6	98	102.9	92.7	95.3
54	Ioweth Hybrid 15.....	74.7	73.9	1.06	18.0	96	100.8	84.5	88.6
55	Gunn Western Plowman.....	75.6	75.3	.34	15.5	79	83.0	86.1	85.3
56	Maland Yellow Dent.....	76.3	76.2	.14	16.9	75	78.8	87.1	85.0
● Average of 5 open-pollinated varieties.....		<b>73.2</b>	<b>72.6</b>	<b>.74</b>	<b>17.2</b>	<b>75.8</b>	<b>79.6</b>	<b>83.0</b>	<b>82.2</b>
	Stelford's White Cap.....	74.1	71.9	2.98	17.2	76	79.8	82.2	81.6
58	Webb Will County Favorite.....	71.8	71.8	0	17.0	75	78.8	82.1	81.3
59	National Hybrid 118 (Brooks).....	71.9	69.3	3.56	17.6	82	86.1	79.2	80.9
60	Hunt White Dent.....	68.1	67.9	.26	19.2	74	77.7	77.6	77.6
Average of all entries.....		88.1	87.5	.77	16.3	95.2	....	....	....

\*Less than 5 bushels of seed sampled.

A difference of less than 4.3 bushels between total yields of any two entries in this table is not significant.



Table 5A.—Two-, Three-, and Four-Year Summaries at Kings, Northern Illinois

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
Average yield of entries grown in 1936, 1937, 1938, 1939									
		bu.	bu.	perct.	perct.	perct.	perct.	perct.	
1	<sup>1</sup> Pfister-Lazier Hybrid 368.....	82.8	81.8	1.40	19.5	80.7	108.9	106.2	106.9
2	DeKalb Hybrid 421.....	84.2	83.0	1.59	19.1	76.3	103.0	107.8	106.6
3	Illinois Hybrid 751.....	80.1	79.3	1.26	20.4	83.1	112.1	103.0	105.3
4	DeKalb Hybrid 433.....	81.8	80.6	1.42	18.8	77.0	103.9	104.7	104.5
5 <sup>1,2</sup>	<sup>2</sup> Pfister-Lazier Hybrid 366.....	81.3	80.3	1.57	20.6	77.3	104.3	104.3	104.3
6	Gunn Western Plowman.....	68.5	67.8	.90	18.4	65.6	88.5	88.1	88.2
●	Average of 5 open-pollinated varieties...	<b>67.0</b>	<b>66.0</b>	<b>1.87</b>	<b>19.5</b>	<b>61.5</b>	<b>83.0</b>	<b>85.7</b>	<b>85.0</b>
7	Webb Will County Favorite.....	67.3	66.3	1.77	19.9	58.5	78.9	86.1	84.3
	Average of all entries.....	78.0	77.0	1.42	19.5	74.1	....	....	....
Average yield of entries grown in 1937, 1938, 1939									
1	Pioneer Hi-Bred 322.....	93.2	92.5	.77	17.4	77.0	108.3	107.4	107.6
2	Moews Hybrid 10.....	91.6	91.0	.63	20.1	76.3	107.3	105.7	106.1
3	Pioneer Hi-Bred 314.....	92.8	92.2	.65	18.2	70.7	99.4	107.1	105.2
4	National Hybrid 117.....	89.5	89.2	.35	19.1	78.0	109.7	103.6	105.1
4	Ioweth Hybrid AQ.....	89.2	88.9	.25	18.8	78.7	110.7	103.2	105.1
6	Illinois Hybrid 751.....	86.8	86.6	.25	19.4	82.2	115.6	100.6	104.4
7	Pfister-Lazier Hybrid 368.....	90.9	90.4	.52	19.1	71.7	100.8	105.0	104.0
8	Funk Hybrid G-19.....	88.3	87.7	.71	18.9	75.2	105.8	101.9	102.9
9	DeKalb Hybrid 421.....	91.3	90.4	.92	19.3	67.7	95.2	105.0	102.6
9	<sup>2</sup> Pfister-Lazier Hybrid 366.....	89.9	89.6	.42	19.7	69.8	98.2	104.1	102.6
11	Funk Hybrid G-27.....	86.4	86.0	.50	17.7	74.8	105.2	99.9	101.2
12	DeKalb Hybrid 433.....	89.5	88.5	1.16	18.2	67.8	95.4	102.8	101.0
13	Funk Hybrid G-30.....	83.4	82.7	.89	18.0	77.0	108.3	96.0	99.1
14	Gunn Western Plowman.....	76.5	76.3	.32	17.4	60.5	85.1	88.6	87.7
15	Maland Yellow Dent.....	75.8	75.6	.32	18.9	57.0	80.2	87.8	85.9
●	Average of 5 open-pollinated varieties...	<b>73.1</b>	<b>72.4</b>	<b>.96</b>	<b>19.2</b>	<b>56.6</b>	<b>79.6</b>	<b>84.1</b>	<b>83.0</b>
16	Webb Will County Favorite.....	71.4	70.7	.94	19.9	52.8	74.3	82.1	80.2
	Average of all entries.....	86.7	86.1	.60	18.8	71.1	....	....	....
Average yield of entries grown in 1938 and 1939									
1	Pioneer Hi-Bred 314.....	94.1	93.4	.77	16.4	89.0	104.6	108.5	107.5
2	Pfister-Lazier Hybrid 368.....	94.2	93.5	.72	17.2	87.5	102.8	108.6	107.2
3	M-L Hybrid 14 (Moews-Lowe).....	92.4	91.7	.77	19.2	91.8	107.9	106.5	106.9
4	Moews Hybrid 10.....	93.8	92.9	.95	17.3	88.0	103.4	107.9	106.8
5	Ioweth Hybrid AQF.....	90.7	90.5	.20	16.3	90.5	106.3	105.1	105.4
6	Pioneer Hi-Bred 322.....	91.9	90.9	1.07	16.6	87.5	102.8	105.6	104.9
7	Illinois Hybrid 751.....	89.7	89.4	.28	18.9	91.3	107.3	103.8	104.7
8	<sup>2</sup> Pfister-Lazier Hybrid 366.....	92.1	91.6	.64	18.0	84.3	99.1	106.4	104.6
9	Ioweth Hybrid 16.....	90.9	90.6	.34	17.8	87.0	102.2	105.2	104.5
10	M-L Hybrid 15 (Moews-Lowe).....	88.6	87.9	.76	17.4	94.8	111.4	102.1	104.4
11	Morgan Hybrid 52.....	91.2	90.9	.28	18.2	84.8	99.6	105.6	104.1
12	DeKalb Hybrid 421.....	92.5	91.3	1.31	16.9	82.5	96.9	106.0	103.7
13	DeKalb Hybrid 404A.....	89.0	88.3	.74	17.0	90.5	106.3	102.6	103.5
14	National Hybrid 117.....	88.5	88.0	.53	17.0	89.0	104.6	102.2	102.8
15	DeKalb Hybrid 433.....	90.1	88.6	1.62	16.2	83.3	97.9	102.9	101.7
16	Ioweth Hybrid AQ.....	86.9	86.8	.19	17.6	88.5	104.0	100.8	101.6
17	National Hybrid 116.....	85.9	85.8	.20	17.3	89.3	104.9	99.6	100.9
18	Funk Hybrid G-19.....	87.3	86.3	1.07	17.9	87.3	102.6	100.2	100.8
19	Ioweth Hybrid 15.....	86.1	85.7	.69	18.6	86.5	101.6	99.5	100.0
20	Funk Hybrid G-30.....	84.9	83.8	1.34	16.8	91.0	106.9	97.3	99.7
21	Funk Hybrid G-15.....	84.0	81.7	2.68	17.9	96.3	113.2	94.9	99.5
22	Funk Hybrid G-27.....	82.5	81.9	.75	16.4	91.3	107.3	95.1	98.2
23	National Hybrid 118.....	82.4	81.0	1.94	18.6	79.0	92.8	94.1	93.8
24	Gunn Western Plowman.....	76.2	75.8	.45	16.3	71.8	84.4	88.0	87.1
25	Maland Yellow Dent.....	75.8	75.6	.34	17.4	67.5	79.3	87.8	85.7
●	Average of 5 open-pollinated varieties...	<b>73.5</b>	<b>72.6</b>	<b>1.25</b>	<b>17.5</b>	<b>66.9</b>	<b>78.6</b>	<b>84.3</b>	<b>82.9</b>
26	Webb Will County Favorite.....	73.0	72.0	1.31	17.6	62.8	73.8	83.6	81.2
27	Hunt White Dent.....	70.1	69.3	1.18	19.4	64.5	75.8	80.5	79.3
	Average of all entries.....	86.8	86.1	.86	17.5	85.1	....	....	....

<sup>1</sup>Entered as Illinois Hybrids in 1936. <sup>2</sup>Entered as Pfister-Stiegelmeier Hybrids in 1937 and 1938.

Table 6.—WEST NORTH-CENTRAL ILLINOIS: Cambridge

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	1939	<i>bu.</i>	<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	
1	Pioneer Hi-Bred 313.....	130.7	129.3	1.06	18.4	93	102.1	113.0	110.3
2	Seeber Hybrid 11A.....	126.2	125.3	.70	18.4	96	105.4	109.5	108.5
3	*Illinois Hybrid 201 (Holmes).....	126.7	121.6	3.99	17.7	100	109.8	106.3	107.2
4	U. S. Hybrid 44 (U. G. Sass).....	126.6	125.2	1.10	16.3	90	98.8	109.4	106.8
5	M-L Hybrid 120 (Moews-Lowe).....	123.0	122.7	.27	16.6	95	104.3	107.3	106.6
6	Iowaleth Hybrid 25.....	126.0	123.2	2.25	15.3	93	102.1	107.7	106.3
7	Pioneer Hi-Bred 307.....	125.0	123.2	1.45	16.8	93	102.1	107.7	106.3
8	U. S. Hybrid 44 (Moews-Lowe).....	124.0	123.1	.76	15.8	93	102.1	107.6	106.2
9	M-L Hybrid 523 (Moews-Lowe).....	122.9	120.9	1.64	18.3	98	107.6	105.7	106.2
10	U. S. Hybrid 44 (Frey).....	126.7	124.6	1.62	15.9	89	97.7	108.9	106.1
11	Iowaleth Hybrid CI.....	120.1	119.6	.44	16.4	98	107.6	104.5	105.3
12	DeKalb Hybrid 800.....	119.4	118.4	.86	17.8	100	109.8	103.5	105.1
13	*I.H.P. Hybrid D6.....	126.7	124.6	1.68	16.6	85	93.3	108.9	105.0
14	Pioneer Hi-Bred 317.....	120.9	120.3	.46	16.6	95	104.3	105.2	105.0
15	*Bear Hybrid OK-49.....	118.5	118.5	0	17.0	99	108.7	103.6	104.9
16	Funk Hybrid G-169.....	120.9	118.8	1.73	17.1	98	107.6	103.8	104.8
17	*I.H.P. Hybrid D7.....	121.9	121.5	.36	16.8	90	98.8	106.2	104.4
18	*Sass Hybrid 305 (U. G. Sass).....	121.9	119.8	1.74	17.1	94	103.2	104.7	104.3
19	M-L Hybrid 514 (Moews-Lowe).....	120.4	118.5	1.55	16.1	96	105.4	103.6	104.1
20	Funk Hybrid G-32.....	122.3	120.0	1.86	17.3	92	101.0	104.9	103.9
21	DeKalb Hybrid 827.....	121.1	119.9	.97	16.3	92	101.0	104.8	103.9
22	Illinois Hybrid 960 (U. G. Sass).....	123.4	121.6	1.48	16.7	87	95.5	106.3	103.6
23	Pfister Hybrid 360.....	121.5	120.8	.56	16.6	89	97.7	105.6	103.6
24	*M-L Hybrid 20 (Moews-Lowe).....	121.3	119.4	1.57	17.6	92	101.0	104.4	103.6
25	*Illinois Hybrid 374 (Sibley Farms).....	122.4	118.2	3.46	16.6	94	103.2	103.3	103.3
26	Sass Hybrid 50 (L. A. Sass).....	122.7	121.2	1.24	17.2	86	94.4	105.9	103.0
27	National Hybrid 119a (Brooks).....	119.0	118.5	.38	16.1	92	101.0	103.6	103.0
28	U. S. Hybrid 5 (Mountjoy).....	120.4	120.0	.31	16.6	88	96.6	104.9	102.8
29	*Morgan Hybrid 52A.....	120.7	118.8	1.57	17.4	91	99.9	103.8	102.8
30	*I.H.P. Hybrid D5.....	119.2	118.9	.22	16.3	90	98.8	103.9	102.6
31	U. S. Hybrid 14 (Ferris).....	120.5	117.2	2.70	17.6	94	103.2	102.4	102.6
32	DeKalb Hybrid 606.....	117.6	116.7	.79	16.1	95	104.3	102.0	102.6
33	Pfister Hybrid 360A.....	119.9	119.6	.22	16.2	88	96.6	104.5	102.5
34	Funk Hybrid G-212.....	117.7	116.8	.78	17.4	94	103.2	102.1	102.4
35	*Null Hybrid N-631.....	121.7	118.3	2.78	17.4	90	98.8	103.4	102.3
36	Funk Hybrid G-63.....	121.7	117.2	3.66	16.9	92	101.0	102.4	102.1
37	*Null Hybrid N-92.....	116.5	115.3	1.02	16.1	96	105.4	100.8	102.0
38	*Pioneer Hi-Bred 331.....	115.2	113.8	1.19	16.1	99	108.7	99.5	101.8
39	U. S. Hybrid 45 (L. A. Sass).....	121.1	120.2	.72	17.2	83	91.1	105.1	101.6
40	Iowaleth Hybrid AQ.....	113.8	113.1	.59	16.3	100	109.8	98.9	101.6
41	U. S. Hybrid 44 (Morgan).....	117.7	116.4	1.12	16.7	92	101.0	101.7	101.5
42	*Crow Hybrid 618.....	118.2	116.3	1.59	17.2	91	99.9	101.7	101.3
43	DeKalb Hybrid 615.....	117.6	112.7	4.16	15.3	100	109.8	98.5	101.3
44	Pioneer Hi-Bred 330.....	117.3	112.6	3.99	16.3	100	109.8	98.4	101.3
45	*Crow Hybrid 602.....	116.4	114.7	1.48	17.2	93	102.1	100.3	100.8
46	*Illinois Hybrid 200 (Holmes).....	114.9	114.0	.80	20.0	95	104.3	99.6	100.8
47	Funk Hybrid G-53.....	116.0	114.4	1.36	16.0	92	101.0	100.0	100.3
48	*E. W. Doubet Hybrid CR-114.....	118.1	113.7	3.75	17.4	93	102.1	99.4	100.1
49	Stiegelmeier Hybrid 702.....	112.9	112.0	.81	16.1	96	105.4	97.9	99.8
50	*Crow Hybrid 402.....	114.5	114.1	.34	16.0	90	98.8	99.7	99.5
51	Funk Hybrid G-571 (W).....	116.9	116.4	.40	17.8	84	92.2	101.7	99.3
52	DeKalb Hybrid 628.....	117.5	114.5	2.55	16.3	87	95.5	100.1	99.0
53	DeKalb Hybrid 825.....	109.9	109.5	.35	15.9	99	108.7	95.7	99.0
54	Stiegelmeier Hybrid 701.....	112.1	111.0	.98	17.6	94	103.2	97.0	98.6
55	*Illinois Hybrid 944 (Sibley Farms).....	114.2	112.1	1.82	17.1	90	98.8	98.0	98.2
56	Illinois Hybrid 936 (Mohr).....	111.4	108.4	2.68	17.2	93	102.1	94.8	96.6
57	National Hybrid 131 (Brooks).....	112.2	110.9	1.19	17.2	86	94.4	96.9	96.3
58	Pioneer Hi-Bred 314.....	108.6	108.3	.25	14.5	92	101.0	94.7	96.3
59	Morgan Hybrid 52.....	109.8	109.3	.47	16.6	89	97.7	95.5	96.1
60	*Hahn Hybrid 153.....	113.5	108.9	4.09	16.3	90	98.8	95.2	96.1
61	*Morgan Hybrid 62.....	114.6	112.0	2.31	14.7	82	90.0	97.9	95.9
62	*Bear Hybrid OK-63.....	109.2	109.1	.07	18.0	88	96.6	95.4	95.7
63	Illinois Hybrid 751 (L. A. Sass).....	109.9	105.5	4.02	16.4	96	105.4	92.2	95.5
64	Iowaleth Hybrid 20B.....	110.3	107.6	2.48	17.0	90	98.8	94.1	95.3
65	Stiegelmeier Hybrid 90.....	107.4	107.4	0	15.8	89	97.7	93.9	94.9
66	*Hahn Hybrid 151.....	110.3	108.1	2.01	16.0	84	92.2	94.5	93.9
67	*E. W. Doubet Hybrid CR-46.....	109.0	102.0	6.44	17.4	86	94.4	89.2	90.5
68	Iowaleth Hybrid 15.....	99.2	98.8	.39	16.0	90	98.8	86.4	89.5
69	Roeschley Yellow Dent.....	106.8	104.2	2.45	13.4	74	81.2	91.1	88.6
70	National Hybrid 124a (Brooks).....	101.9	99.9	1.96	14.2	84	92.2	87.3	88.5
71	Doubet Yellow Dent.....	106.2	101.1	4.83	19.2	79	86.7	88.4	88.0
72	Krug.....	103.2	98.9	4.20	18.2	77	84.5	86.4	85.9
73	McKeighan Yellow Dent.....	96.5	95.0	1.56	18.7	85	93.3	83.0	85.6
74	● Average of 5 open-pollinated varieties.....	100.0	97.2	2.70	17.2	77.2	85.1	85.0	85.0
75	DeKalb Hybrid 639.....	89.7	89.0	.76	16.6	91	99.9	77.8	83.3
76	Hunt White Dent.....	87.4	87.0	.44	16.4	71	80.0	76.0	77.0
	Average of all entries.....	116.3	114.4	1.60	16.7	91.1	....	....	....

\*Less than 5 bushels of seed sampled.

A difference of less than 5.2 bushels between total yields of any two entries in this table is not significant.

Table 6A.—Resistance to Lodging Caused by Feeding of Southern Corn Rootworm:<sup>1</sup> West North-Central, Cambridge

Rank	Entry	Plants leaving 30 degrees or more <sup>2</sup> degrees	Resistance rating com- pared with averages <sup>3</sup> (hybrids only)	Rank	Entry	Plants leaving more than 45 degrees	Resistance rating com- pared with averages <sup>3</sup> (hybrids only)
<b>1939</b>							
1	DeKalb Hybrid 615.....	1.2	1	41	DeKalb Hybrid 606.....	perct.	95
2	Pioneer Hi-Bred 307.....	2.6	367	42	Nall Hybrid N-631.....	12.4	2.4
3	DeKalb Hybrid 800.....	2.0	631	43	Funk Hybrid G-63.....	16.3	8.7
4	Illinois Hybrid 200 (Holmes).....	3	631	44	U. S. Hybrid 14 (Ferris).....	17.1	1.2
5	Iowa Hybrid 15.....	2.9	547	45	National Hybrid 119.....	16.0	86
6	Funk Hybrid G-169.....	3.7	432	46	Crows Hybrid 602.....	17.6	85
7	M-J Hybrid 20 (Moews-Lowe).....	3.8	432	47	Stiegelmeier Hybrid 701.....	17.7	84
8	M-L Hybrid 523 (Moews-Lowe).....	4.9	328	48	Morgan Hybrid 62.....	20.0	80
9	Pioneer Hi-Bred 317.....	5.0	328	49	Illinois Hybrid 944 (Sibley Farms).....	18.8	80
10	Seeber Hybrid 11A.....	4.3	328	50	Illinois Hybrid 936 (Mohr).....	18.2	80
11	National Hybrid 131.....	4.5	315	51	E. W. Doubet Hybrid CR-46.....	19.0	79
12	M-L Hybrid 514 (Moews-Lowe).....	3.4	315	52	Nall Hybrid N-92.....	17.6	75
13	Pioneer Hi-Bred 331.....	3.4	283	53	Bear Hybrid OK-63.....	15.6	75
14	Illinois Hybrid 201 (Holmes).....	5.4	273	54	Stiegelmeier Hybrid 702.....	19.8	74
15	DeKalb Hybrid 825.....	5.4	265	55	Illinois Hybrid 960 (U. G. Sass).....	19.6	73
16	Funk Hybrid G-212.....	6.1	241	56	I.H.P. Hybrid D6.....	23.0	68
17	U. S. Hybrid 44 (Moews).....	7.2	210	57	U. S. Hybrid 45 (L. A. Sass).....	20.7	65
18	Sass Hybrid 305 (U. G. Sass).....	7.7	185	58	DeKalb Hybrid 628.....	25.0	64
19	Morgan Hybrid 52.....	8.2	186	59	Stiegelmeier Hybrid 90.....	25.3	59
20	Hahn Hybrid 153.....	8.6	174	60	Pistier Hybrid 360A.....	22.9	57
21	Funk Hybrid G-32.....	8.8	171	61	I.H.P. Hybrid D5.....	25.9	57
22	U. S. Hybrid 5 (Mountjoy).....	7.9	167	62	Pistier Hybrid 360.....	24.3	55
23	Pioneer Hi-Bred 313.....	11.5	141	63	National Hybrid 124.....	26.2	55
24	Bear Hybrid OK-49.....	10.8	137	64	Sass Hybrid 50.....	26.1	53
25	Iowa Hybrid 618.....	11.5	134	65	Crow Hybrid 402.....	24.3	53
26	Iowa Hybrid AQ.....	10.3	134	66	Pioneer Hi-Bred 314.....	27.5	52
27	Funk Hybrid G-53.....	9.7	134	67	Illinois Hybrid 751 (L. A. Sass).....	28.5	46
28	E. W. Doubet Hybrid CR-114.....	12.0	130	68	Hahn Hybrid 161.....	31.8	42
29	DeKalb Hybrid 639.....	10.7	124	69	Funk Hybrid G-571 (W).....	40.4	37
30	Iowa Hybrid 25.....	11.5	122	70	I.H.P. Hybrid D7.....	42.4	34
31	M-J Hybrid 120 (Moews-Lowe).....	13.2	119	Average of hybrid entries.....			
32	DeKalb Hybrid 827.....	11.9	119	McKeighan Yellow Dent.....			
33	Pioneer Hi-Bred 330.....	11.6	117	Doubet Yellow Dent.....			
34	Iowa Hybrid CI.....	13.0	116	Krug.....			
35	U. S. Hybrid 44 (Morgan).....	13.7	109	Roeschley Yellow Dent.....			
36	Morgan Hybrid 52A.....	14.7	107	Hunt White Dent.....			
37	Iowa Hybrid 20B.....	13.5	107	Average of open-pollinated entries.....			
38	Illinois Hybrid 374 (Sibley Farms).....	14.2	103	.....			
39	U. S. Hybrid 44 (U. G. Sass).....	13.6	100	.....			
40	U. S. Hybrid 44 (Frey).....	15.3	99	.....			

<sup>1</sup>Southern corn rootworm, *Diabrotica undecimpunctata* Fab.<sup>2</sup>A difference of less than 2.7 in this column is not significant.<sup>3</sup>High rating indicates better standing ability.

Table 6B.—Two-, Three-, and Four-Year Summaries at Cambridge, West North-Central Illinois

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
Average yield of entries grown in 1936, 1937, 1938, 1939									
		bu.	bu.	perct.	perct.	perct.	perct.	perct.	
1	U. S. Hybrid 44.....	94.2	93.3	1.00	16.9	74.5	104.9	109.4	108.3
2	Funk Hybrid G-212.....	90.3	89.7	.87	17.1	76.4	107.6	105.2	105.8
3	Pfister Hybrid 360.....	89.6	89.1	.70	17.3	74.8	105.4	104.5	104.7
4	Illinois Hybrid 960.....	91.1	90.3	.88	17.1	69.8	98.3	105.9	104.0
5	Illinois Hybrid 751.....	83.9	82.6	1.34	16.8	79.0	111.3	96.8	100.4
6	Roeschley Yellow Dent.....	78.5	77.3	1.46	17.0	58.3	82.1	90.6	88.5
7	McKeighan Yellow Dent.....	75.4	74.6	1.28	19.1	64.1	90.3	87.5	88.2
	● Average of 5 open-pollinated varieties.....	<b>75.2</b>	<b>73.9</b>	<b>1.73</b>	<b>18.1</b>	<b>58.7</b>	<b>82.7</b>	<b>86.6</b>	<b>85.6</b>
	Average of all entries.....	86.1	85.3	1.08	17.3	71.0	....	....	....
Average yield of entries grown in 1937, 1938, 1939									
1	Pioneer Hi-Bred 307.....	117.2	115.7	1.39	16.9	71.5	106.4	109.7	108.9
2	U. S. Hybrid 44.....	115.4	114.7	.54	16.3	67.8	100.9	108.7	106.8
3	DeKalb Hybrid 825.....	105.7	105.4	.27	17.9	82.8	123.2	99.9	105.7
4	Funk Hybrid G-212.....	111.6	111.1	.43	17.2	71.2	106.0	105.3	105.5
5	Pioneer Hi-Bred 317.....	110.3	109.8	.49	16.9	73.3	109.1	104.1	105.4
6	Pfister Hybrid 360A.....	112.2	112.1	.07	13.3	68.7	102.2	106.3	105.3
7	Funk Hybrid G-32.....	110.6	109.8	.67	17.6	70.2	104.5	104.1	104.2
8	Iowaleth Hybrid AQ.....	104.8	104.2	.54	15.7	80.7	120.1	98.8	104.1
9	Pfister Hybrid 360.....	110.3	109.7	.50	17.3	66.5	99.0	104.0	102.8
10	Morgan Hybrid 52.....	108.0	107.7	.68	16.6	70.2	104.5	102.1	102.7
11	Illinois Hybrid 960.....	111.0	110.2	.67	17.2	63.8	94.9	104.5	102.1
12	Illinois Hybrid 751.....	103.5	102.1	1.34	16.6	75.7	112.6	96.8	100.8
13	Pioneer Hi-Bred 314.....	105.3	104.4	.89	15.8	69.0	102.7	99.0	99.9
14	McKeighan Yellow Dent.....	93.7	93.0	.70	19.2	58.3	86.8	88.2	87.9
15	Roeschley Yellow Dent.....	98.6	97.3	1.23	16.4	49.0	72.9	92.2	87.4
16	Krug.....	95.6	93.9	1.71	17.9	51.0	75.9	89.0	85.7
	● Average of 5 open-pollinated varieties.....	<b>94.5</b>	<b>93.2</b>	<b>1.22</b>	<b>18.0</b>	<b>51.8</b>	<b>77.1</b>	<b>88.3</b>	<b>85.5</b>
17	Doubet Yellow Dent.....	94.3	92.3	1.94	18.5	53.3	79.3	87.5	85.5
	Average of all entries.....	106.4	105.5	.83	16.9	67.2	....	....	....
Average yield of entries grown in 1938 and 1939									
1	Pioneer Hi-Bred 313.....	117.3	116.6	.53	18.4	69.0	90.2	114.8	108.7
2	M-L Hybrid 523 (Moews-Lowe).....	111.3	109.2	1.98	17.0	85.3	111.5	107.5	108.5
3	M-L Hybrid 514 (Moews-Lowe).....	109.5	108.5	.81	15.6	84.0	109.8	106.8	107.6
4	M-L Hybrid 120 (Moews-Lowe).....	108.6	108.1	.44	16.1	83.8	109.5	106.4	107.2
5	U. S. Hybrid 44.....	112.4	111.3	.96	15.8	76.4	99.9	109.5	107.1
6	Pioneer Hi-Bred 307.....	112.7	110.8	1.80	16.3	75.8	99.1	109.1	106.6
7	DeKalb Hybrid 827.....	106.8	106.2	.52	16.0	83.8	109.5	104.5	105.8
8	Funk Hybrid G-63.....	110.5	108.0	2.01	15.8	74.3	97.1	106.3	104.0
9	Pfister Hybrid 360.....	106.7	106.1	.52	16.5	77.8	101.7	104.4	103.7
9	Pioneer Hi-Bred 317.....	105.8	105.3	.45	16.3	79.5	103.9	103.6	103.7
11	National Hybrid 119s.....	104.7	104.3	.33	15.8	80.3	105.0	102.7	103.3
12	Funk Hybrid G-212.....	105.8	105.1	.79	16.7	77.8	101.7	103.4	103.0
13	Iowaleth Hybrid CI.....	102.6	102.1	.59	16.2	82.8	108.2	100.5	102.4
14	Pfister Hybrid 260A.....	105.1	105.0	.11	15.8	75.0	98.0	103.3	102.0
15	DeKalb Hybrid 825.....	100.1	99.9	.18	16.7	86.3	112.8	98.3	101.9
16	Funk Hybrid G-53.....	102.7	101.2	1.40	15.9	83.0	108.5	99.6	101.8
17	Illinois Hybrid 960.....	106.5	105.3	1.10	16.1	73.3	95.8	103.6	101.7
18	Funk Hybrid G-32.....	104.6	103.4	.93	16.9	77.3	101.0	101.8	101.6
19	Morgan Hybrid 52.....	99.8	99.0	.92	15.7	81.3	106.3	97.4	99.6
20	Pioneer Hi-Bred 314.....	101.8	100.7	1.12	14.6	76.0	99.3	99.1	99.2
21	Iowaleth Hybrid AQ.....	98.0	97.6	.38	14.9	82.0	107.2	96.1	98.9
22	Illinois Hybrid 751.....	98.2	96.0	2.01	16.1	84.5	110.5	94.5	98.5
23	Iowaleth Hybrid 15.....	95.1	94.7	.40	15.5	76.3	99.7	93.2	94.8
24	Roeschley Yellow Dent.....	95.5	94.1	1.40	14.6	61.0	79.7	92.6	89.4
25	McKeighan Yellow Dent.....	88.6	87.7	.93	18.1	70.0	91.5	86.3	87.6
26	Doubet Yellow Dent.....	90.6	88.0	2.52	18.2	65.0	85.0	86.6	86.2
	● Average of 5 open-pollinated varieties.....	<b>89.4</b>	<b>87.9</b>	<b>1.54</b>	<b>16.9</b>	<b>63.3</b>	<b>82.7</b>	<b>86.5</b>	<b>85.6</b>
27	Krug.....	89.7	87.4	2.27	17.2	64.0	83.7	86.0	85.4
28	Hunt White Dent.....	82.7	82.2	.55	16.2	56.3	73.6	80.9	79.1
	Average of all entries.....	102.6	101.6	1.00	16.3	76.5	....	....	....

<sup>1</sup>Entered as Illinois Hybrids in 1936 and as Pfister-Stiegelmeier Hybrids in 1937 and 1938.



Table 6C.—Two-Year Summary of Lodging Caused by Feeding of Southern Corn Rootworm:<sup>1</sup> West North-Central Illinois, Cambridge

Rank	Entry	Plants leaning 30 degrees or more
Average of 1937 and 1939		
		<i>perct.</i>
1	Iowearth Hybrid AQ	17.9
2	Pioneer Hi-Bred 307	21.1
3	Pioneer Hi-Bred 317	25.3
4	DeKalb Hybrid 825	26.3
5	Funk Hybrid G-212	29.0
6	Morgan Hybrid 52	29.1
7	Iowearth Hybrid 25	29.8
8	Illinois Hybrid 960	35.3
9	U. S. Hybrid 44	37.0
10	DeKalb Hybrid 606	41.7
11	DeKalb Hybrid 639	43.8
12	U. S. Hybrid 45	47.2
13	DeKalb Hybrid 628	48.0
14	Pioneer Hi-Bred 314	48.1
15	Illinois Hybrid 751	56.2
	Average of hybrids	35.7
16	McKeighan Yellow Dent	65.4
17	Krug	73.0
18	Roeschley Yellow Dent	79.3
19	Doubet Yellow Dent	79.5
	Average of open-pollinated varieties	74.3

<sup>1</sup>Southern corn rootworm, *Diabrotica duodecimpunctata* Fab. See also text, pages 174 and 175.

Table 8C.—Two-Year Summary of Resistance to Lodging Caused by Feeding of Southern Corn Rootworm:<sup>1</sup> West-Central Illinois, Littleton

Rank	Entry	Plants leaning 30 degrees or more	Plants leaning 45 degrees or more	Resistance rating com- pared with average <sup>2</sup> (hybrids only)
Average of 1938 and 1939				
		<i>perct.</i>	<i>perct.</i>	
1	DeKalb Hybrid 827	35.1	2.0	147
2	Funk Hybrid G-53	36.8	2.9	136
3	U. S. Hybrid 35	38.5	2.5	133
4	Funk Hybrid G-94	42.1	3.0	120
5	U. S. Hybrid 5	41.3	3.5	119
6	U. S. Hybrid 13	42.8	4.3	112
7	M-L Hybrid 514 (Moews-Lowe)	46.3	3.8	107
8	Illinois Hybrid 960 (Holmes)	45.3	5.4	103
9	National Hybrid 119	43.7	8.8	94
10	Iowearth Hybrid C1	48.4	7.1	92
11	U. S. Hybrid 44 (Moews)	45.8	9.7	89
12	Pioneer Hi-Bred 307	51.3	6.9	89
13	Funk Hybrid G-212	45.9	10.1	87
14	Iowearth Hybrid AQ	51.7	9.4	82
15	Pioneer Hi-Bred 313	65.3	13.2	63
	Average of hybrids	45.4	6.2	100
16	Station Yellow Dent	72.3	21.7	...
17	Mountjoy Utility Dent	73.9	24.9	...
18	Doubet Yellow Dent	77.7	23.9	...
19	Sommer Yellow Dent	73.7	27.9	...
	Average of open-pollinated varieties	74.4	24.6	...

<sup>1</sup>Southern corn rootworm, *Diabrotica duodecimpunctata* Fab. See also text, pages 174 and 175.

<sup>2</sup>Average resistance of all hybrids = 100. High rating indicates increased standing ability.

Table 7.—EAST NORTH-CENTRAL ILLINOIS: Reddick

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
1939									
1	Funk Hybrid G-32.....	86.5	86.3	.26	11.3	98	102.7	112.9	110.4
2	*Bear Hybrid OK-69.....	85.7	85.3	.43	13.8	97	101.6	111.6	109.1
3	U. S. Hybrid 14 (Ferris).....	85.8	84.0	2.07	11.9	100	104.8	109.9	108.6
4	*M-L Hybrid 523 (Moews-Lowe).....	85.3	83.8	1.78	13.8	98	102.7	109.6	107.9
5	Illinois Hybrid 972 (Holmes).....	84.3	83.4	1.10	12.7	97	101.6	109.1	107.2
6	lowealth Hybrid 25.....	83.3	82.9	.44	11.5	98	102.7	108.4	107.0
6	M-L Hybrid 514 (Moews-Lowe).....	82.8	82.6	.19	11.7	99	103.7	108.1	107.0
8	Seeber Hybrid 11A.....	83.1	82.4	.80	13.8	98	102.7	107.8	106.5
9	lowealth Hybrid CI.....	83.5	82.7	.98	11.9	95	99.5	108.2	106.0
9	*Bear Hybrid OK-70.....	82.1	81.6	.58	14.3	99	103.7	106.7	106.0
11	Funk Hybrid G-40.....	82.3	81.8	.55	11.9	98	102.7	107.0	105.9
12	*L.H.P. Hybrid 233.....	83.8	82.1	1.98	14.5	96	100.6	107.4	105.7
12	U. S. Hybrid 44 (Frey).....	82.8	81.9	1.12	11.4	97	101.6	107.1	105.7
14	Pioneer Hi-Bred 313.....	83.6	82.8	1.01	11.1	93	97.4	108.3	105.6
15	Illinois Hybrid 960 (L. A. Sass).....	82.3	82.0	.40	12.3	95	99.5	107.3	105.4
16	Stiegelmeier Hybrid 702.....	80.7	80.5	.24	11.4	100	104.8	105.3	105.2
17	*Morgan Hybrid 82.....	81.8	81.7	.18	12.3	94	98.5	106.9	104.8
17	*U. S. Hybrid 13 (Holmes).....	81.9	80.9	1.24	13.1	97	101.6	105.8	104.8
19	DeKalb Hybrid 628.....	81.4	81.3	.18	11.7	95	99.5	106.4	104.7
19	Funk Hybrid G-212.....	80.7	80.5	.26	11.9	98	102.7	105.3	104.7
21	Funk Hybrid G-169.....	80.9	79.7	1.43	12.7	100	104.8	104.3	104.4
22	*Pioneer Hi-Bred 331.....	80.5	79.7	1.00	12.1	98	102.7	104.3	103.9
23	Hahn Hybrid 151.....	81.7	80.7	1.26	12.8	94	98.5	105.6	103.8
23	U. S. Hybrid 5 (Mountjoy).....	80.1	80.1	.05	11.8	96	100.6	104.8	103.8
25	*Crow Hybrid 602.....	80.6	80.5	.11	12.9	94	98.5	105.3	103.6
26	Sass Hybrid 50 (L. A. Sass).....	80.5	80.1	.54	12.0	95	99.5	104.8	103.5
27	*Funk Hybrid G-37.....	79.2	78.4	1.00	12.5	100	104.8	102.6	103.2
27	DeKalb Hybrid 615.....	78.5	78.4	.19	11.4	100	104.8	102.6	103.2
29	Pioneer Hi-Bred 317.....	79.5	79.1	.48	11.7	97	101.6	103.5	103.0
30	Stiegelmeier Hybrid 380.....	79.4	79.2	.20	12.8	96	100.6	103.6	102.9
31	Illinois Hybrid 751 (U. G. Sass).....	80.0	77.3	3.32	12.5	100	104.8	101.1	102.0
32	Illinois Hybrid 582 (P.C.I.A.).....	78.9	78.7	.31	11.9	94	98.5	103.0	101.9
33	*L.H.P. Hybrid D8.....	79.5	76.9	3.28	11.3	100	104.8	100.6	101.7
34	Kelly Hybrid K-374.....	78.5	77.0	1.89	13.2	99	103.7	100.7	101.5
35	*Pioneer Hi-Bred 314.....	77.6	76.8	1.04	10.7	99	103.7	100.5	101.3
36	Sibley Farms Hybrid 753B.....	78.0	77.5	.67	12.9	96	100.6	101.4	101.2
37	*Crow Hybrid 618.....	76.9	76.8	.16	11.9	98	102.7	100.5	101.1
37	*Hooiser Cross Hybrid 422.....	76.5	76.4	.12	10.7	100	104.8	99.9	101.1
39	Sibley Farms Hybrid 753A.....	79.2	77.6	2.02	13.1	95	99.5	101.5	101.0
40	Pioneer Hi-Bred 307.....	77.6	77.2	.46	11.5	96	100.6	101.0	100.9
41	U. S. Hybrid 45 (L. A. Sass).....	78.1	77.4	.87	11.9	94	98.5	101.3	100.6
42	*M-L Hybrid 524 (Moews-Lowe).....	78.2	77.0	1.53	12.2	94	98.5	100.7	100.2
42	DeKalb Hybrid 827.....	77.3	76.0	1.68	12.5	98	102.7	99.4	100.2
44	U. S. Hybrid 44 (P.C.I.A.).....	77.1	76.6	.67	11.4	95	99.5	100.2	100.0
45	U. S. Hybrid 63 (P.C.I.A.).....	77.0	75.0	2.65	11.5	100	104.8	98.1	99.8
46	Moews Hybrid 10 (Moews-Lowe).....	75.1	75.1	0	11.4	98	102.7	98.2	99.3
47	U. S. Hybrid 44 (Moews-Lowe).....	75.7	75.2	.70	12.7	97	101.6	98.4	99.2
48	U. S. Hybrid 44 (U. G. Sass).....	75.0	74.4	.80	12.7	98	102.7	97.3	98.7
49	*U. S. Hybrid 35 (U. G. Sass).....	74.7	74.1	.76	11.9	99	103.7	96.9	98.6
50	*Sass Hybrid 40 (U. G. Sass).....	75.1	74.4	.87	11.7	96	100.6	97.3	98.1
51	DeKalb Hybrid 606.....	74.6	74.3	.36	13.8	95	99.5	97.2	97.8
52	DeKalb Hybrid 825.....	73.3	73.3	.02	11.3	98	102.7	95.9	97.6
53	*L.H.P. Hybrid D4.....	73.3	72.8	.70	11.3	98	102.7	95.2	97.1
54	Stiegelmeier Hybrid 701.....	72.8	72.2	.80	12.7	98	102.7	94.5	96.6
55	Stiegelmeier Hybrid 802.....	73.6	72.0	2.16	12.5	98	102.7	94.2	96.3
56	Funk Hybrid G-561 (W.).....	75.0	73.8	1.60	11.5	91	95.3	96.5	96.2
56	lowealth Hybrid AQ.....	71.9	71.6	.36	11.7	99	103.7	93.7	96.2
58	Crow Hybrid 501 (W.).....	73.4	72.8	.86	11.5	91	95.3	95.2	95.2
59	DeKalb Hybrid 604.....	70.8	70.7	.12	12.9	98	102.7	92.5	95.1
60	Pioneer Hi-Bred 330.....	70.1	69.7	.60	11.1	100	104.8	91.2	94.6
61	National Hybrid 126a (Brooks).....	69.9	69.8	.29	11.4	99	103.7	91.3	94.4
62	Roeschley Yellow Dent.....	73.0	72.8	.26	13.1	86	90.1	95.2	93.9
63	*Morgan Hybrid 92.....	74.0	72.1	2.51	11.0	87	91.1	94.3	93.5
64	Doubet Yellow Dent.....	72.7	72.0	.94	11.3	87	91.1	94.2	93.4
65	*Hahn Hybrid 153.....	70.3	69.2	1.55	11.3	96	100.6	90.5	93.0
66	Krug.....	70.8	70.1	1.04	15.5	89	93.2	91.7	92.1
67	*National Hybrid 116 (Brooks).....	66.7	66.3	.62	11.9	93	102.7	86.7	90.7
68	*Crow Hybrid 402.....	67.7	67.0	.97	12.0	93	97.4	87.6	90.1
● Average of 5 open-pollinated varieties.....									
69	*Miller Hybrid 470.....	81.0	79.1	2.32	12.7	46	48.2	103.5	89.7
70	McKeighan Yellow Dent.....	64.4	64.3	.12	15.2	89	93.2	84.1	86.4
71	lowealth Hybrid 15.....	63.4	60.9	3.91	11.8	93	97.4	79.7	84.1
72	Hunt White Dent.....	64.5	64.0	.80	11.7	81	84.9	83.7	84.0
73	DeKalb Hybrid 639.....	61.4	59.7	2.72	11.4	95	99.5	78.1	83.5
Average of all entries.....									
		77.2	76.5	.98	12.2	95.4	....	....	....

\*Less than 5 bushels of seed sampled. <sup>1</sup>Average of 9 plots instead of 10.

A difference of less than 7.3 bushels between total yields of any two entries in this table is not significant.

Table 7A.—Two-, Three-, and Four-Year Summaries at Reddick, East North-Central Illinois

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
Average yields of entries grown in 1936, 1937, 1938, 1939									
		<i>bu.</i>	<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	
1	Funk Hybrid G-212.....	75.4	74.4	1.56	14.9	80.8	111.6	105.2	106.8
2	Illinois Hybrid 960.....	76.6	75.7	1.25	15.5	76.4	105.5	107.1	106.7
3	Moews Hybrid 10.....	73.2	72.9	.53	14.8	80.6	111.3	103.1	105.2
4	U. S. Hybrid 44.....	73.8	73.3	.83	15.6	78.9	109.0	103.7	105.0
5	Illinois Hybrid 582.....	74.8	74.4	.63	15.4	73.6	101.7	105.2	104.3
6	Illinois Hybrid 751.....	72.0	71.0	1.27	15.3	57.3	79.1	100.4	95.1
7	Roeschley Yellow Dent.....	63.9	63.4	.96	17.0	63.7	88.0	89.7	89.3
8	McKeighan Yellow Dent.....	60.7	60.2	.95	18.2	67.5	93.2	85.1	87.1
●	Average of 5 open-pollinated varieties.....	<b>61.3</b>	<b>60.5</b>	<b>1.54</b>	<b>16.9</b>	<b>62.7</b>	<b>86.6</b>	<b>85.6</b>	<b>85.9</b>
	Average of all entries.....	71.3	70.7	1.00	15.8	72.4	....	....	....
Average yield of entries grown in 1937, 1938, 1939									
1	Pioneer Hi-Bred 307.....	74.9	74.6	.39	13.0	82.0	109.3	108.3	108.6
1	Funk Hybrid G-32.....	74.2	74.0	.25	13.6	84.2	112.3	107.4	108.6
3	Funk Hybrid G-212.....	74.2	73.2	1.41	13.1	82.7	110.3	106.2	107.2
4	Illinois Hybrid 960.....	73.5	72.6	1.25	13.9	78.7	104.9	105.4	105.3
5	U. S. Hybrid 44.....	72.2	71.8	.51	14.0	80.5	107.3	104.2	105.0
6	DeKalb Hybrid 628.....	72.5	72.3	.34	14.2	77.5	103.3	104.9	104.5
7	Illinois Hybrid 582.....	71.7	71.6	.34	13.5	76.5	102.0	103.9	103.4
8	Moews Hybrid 10.....	70.4	70.2	.36	13.1	80.2	106.9	101.9	103.2
9	Pioneer Hi-Bred 317.....	70.5	70.2	.34	13.7	78.7	104.9	101.9	102.7
10	Pioneer Hi-Bred 314.....	69.3	68.2	1.59	12.9	81.3	108.4	99.0	101.4
11	Ioweth Hybrid A.Q.....	67.3	67.1	.31	12.5	81.7	108.9	97.4	100.3
12	DeKalb Hybrid 606.....	69.5	69.0	.60	14.6	74.0	98.7	100.1	99.8
13	DeKalb Hybrid 693.....	66.9	66.0	1.39	13.8	74.8	99.7	95.8	96.8
14	Illinois Hybrid 751.....	73.3	72.3	1.29	13.9	52.2	69.6	104.9	96.1
15	Roeschley Yellow Dent.....	65.1	64.8	.35	15.6	71.8	95.7	94.1	94.5
16	Krug.....	64.0	63.7	.46	16.5	58.8	78.4	92.5	89.0
17	McKeighan Yellow Dent.....	59.4	59.3	.18	17.1	69.8	93.1	86.1	87.9
●	Average of 5 open-pollinated varieties.....	<b>61.1</b>	<b>60.6</b>	<b>.83</b>	<b>15.8</b>	<b>64.9</b>	<b>86.5</b>	<b>88.0</b>	<b>87.6</b>
18	Doubet Yellow Dent.....	60.3	59.4	1.55	14.6	64.8	86.4	86.2	86.3
	Average of all entries.....	69.4	68.9	.72	14.1	75.0	....	....	....
Average yield of entries grown in 1938 and 1939									
1	M-L Hybrid 514 (Moews-Lowe).....	80.5	80.3	.29	12.2	91.0	112.1	114.1	113.6
2	Pioneer Hi-Bred 313.....	80.8	79.7	1.32	12.3	84.0	103.4	113.2	110.8
3	Funk Hybrid G-32.....	77.1	76.8	.38	12.4	88.8	109.4	109.1	109.2
4	M-L Hybrid 523 (Moews-Lowe).....	77.6	76.8	.91	13.9	85.8	105.7	109.1	108.3
5	Illinois Hybrid 960.....	77.5	76.2	1.82	12.8	86.5	106.5	108.2	107.8
6	Pioneer Hi-Bred 307.....	75.5	75.2	.47	12.4	85.0	104.7	106.8	106.3
7	Funk Hybrid G-212.....	76.0	74.5	2.03	12.2	86.5	106.5	105.8	106.0
8	Ioweth Hybrid C.I.....	74.9	74.1	1.11	12.8	86.8	106.9	105.3	105.7
9	DeKalb Hybrid 628.....	74.3	74.3	.10	13.2	82.8	102.0	105.5	104.6
10	Illinois Hybrid 751.....	74.5	73.0	1.87	12.5	86.3	106.3	103.7	104.4
11	Crow Hybrid 602.....	74.6	74.0	.90	12.8	79.3	97.7	105.1	103.3
12	U. S. Hybrid 44.....	72.6	72.1	.68	12.9	85.2	104.9	102.4	103.0
13	Moews Hybrid 10.....	72.2	71.9	.37	11.9	85.3	105.0	102.1	102.8
14	DeKalb Hybrid 606.....	73.3	72.6	1.40	14.1	80.0	98.5	103.1	102.0
15	Pioneer Hi-Bred 314.....	71.7	70.2	2.25	11.6	86.5	106.5	99.7	101.4
16	Pioneer Hi-Bred 317.....	70.9	70.5	.45	12.5	84.0	103.4	100.1	100.9
17	U. S. Hybrid 35.....	69.1	67.9	1.80	13.4	89.0	109.6	96.5	99.8
18	Illinois Hybrid 582.....	73.9	73.7	.32	12.6	60.3	74.3	104.7	97.1
19	Ioweth Hybrid 15.....	67.6	65.9	2.01	12.2	87.0	107.1	93.6	97.0
20	Ioweth Hybrid A.Q.....	66.5	66.2	.47	12.7	81.5	100.4	94.0	95.6
21	Crow Hybrid 402.....	65.6	65.1	.68	12.8	79.0	97.3	92.5	93.7
22	Roeschley Yellow Dent.....	66.5	66.2	.40	14.6	71.8	88.4	94.0	92.6
23	DeKalb Hybrid 639.....	64.5	63.3	1.96	12.9	80.8	99.5	89.9	92.3
24	Krug.....	63.4	63.0	.79	15.7	69.3	85.3	89.5	88.5
●	Average of 5 open-pollinated varieties.....	<b>61.7</b>	<b>61.0</b>	<b>1.15</b>	<b>14.5</b>	<b>71.3</b>	<b>87.8</b>	<b>86.7</b>	<b>87.0</b>
25	McKeighan Yellow Dent.....	59.0	58.9	.28	16.3	76.8	94.6	83.7	86.4
26	Doubet Yellow Dent.....	61.0	59.8	2.11	12.8	73.3	90.3	84.9	86.3
27	Hunt White Dent.....	58.5	57.3	2.30	13.2	60.5	74.5	81.4	79.7
	Average of all entries.....	71.3	70.4	1.09	13.0	81.2	....	....	....

Table 8.—WEST-CENTRAL ILLINOIS: Littleton

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	1939	bu.	bu.	perct.	perct.	perct.	perct.	perct.	
1	*Bear Hybrid OK-79.....	106.5	106.1	.42	12.5	99	106.5	114.9	112.8
2	*Null Hybrid N-16.....	103.4	100.9	2.41	12.5	99	106.5	109.3	108.6
3	*Funk Hybrid G-80.....	104.1	101.9	2.16	15.3	94	101.1	110.4	108.1
4	Funk Hybrid G-46.....	101.9	101.3	.61	12.4	93	100.0	109.7	107.3
5	*Null Hybrid N-54.....	101.2	100.4	.78	13.1	94	101.1	108.8	106.9
6	Funk Hybrid G-81.....	102.1	100.1	1.92	14.6	94	101.1	108.4	106.6
7	*Bear Hybrid OK-72.....	99.4	98.9	.50	12.1	97	104.3	107.1	106.4
8	Kelly Hybrid K-100.....	99.4	97.9	1.50	14.2	99	106.5	106.1	106.2
9	*Mountjoy Hybrid 2121.....	99.5	98.4	1.10	14.1	97	104.3	106.6	106.0
10	*Illinois Hybrid 200 (Holmes).....	100.1	99.6	.46	13.8	93	100.0	107.9	105.9
10	*Pioneer Hi-Bred 501 (W).....	99.7	99.2	.47	16.0	94	101.1	107.5	105.9
10	*Null-Vollmer Hybrid 97 (Vollmer).....	99.4	99.2	.12	12.2	94	101.1	107.5	105.9
13	*E. W. Doubet Hybrid CR-47.....	99.6	98.3	1.27	12.8	95	102.2	106.5	105.4
14	U. S. Hybrid 5 (Mountjoy).....	98.5	97.5	.98	12.9	97	104.3	105.6	105.3
15	U. S. Hybrid 13 (P.C.I.A.).....	98.6	98.4	.22	13.3	94	101.1	106.6	105.2
15	*U. S. Hybrid 13 (Holmes).....	97.9	97.4	.51	12.4	97	104.3	105.5	105.2
17	*I.H.P. Hybrid 420 (Huey Seed Co.).....	97.7	96.9	.82	13.0	98	105.4	105.0	105.1
18	Illinois Hybrid 206 (Burrus).....	97.3	97.1	.18	13.3	97	104.3	105.2	105.0
18	Stiegelmeier Hybrid 38.....	97.1	96.5	.65	12.9	99	106.5	104.5	105.0
20	*Null-Vollmer Hybrid 98 (Vollmer).....	96.8	96.6	.17	12.9	98	105.4	104.6	104.8
21	DeKalb Hybrid 888.....	98.8	98.4	.43	13.5	92	98.9	106.6	104.7
22	Bear Hybrid OK-60.....	100.1	99.7	.35	11.9	86	92.5	108.0	104.1
23	Stiegelmeier Hybrid 901.....	95.7	95.5	.24	11.4	98	105.4	103.5	104.0
24	*Illinois Hybrid 201 (Holmes).....	98.3	97.8	.50	13.3	91	97.9	105.9	103.9
25	DeKalb Hybrid 816.....	98.2	96.0	2.22	13.2	96	103.2	104.0	103.8
26	*Crow Hybrid 607.....	99.2	99.0	.20	13.4	86	92.5	107.2	103.5
27	Funk Hybrid G-94.....	94.4	94.1	.35	14.9	99	106.5	101.9	103.1
28	DeKalb Hybrid 827.....	95.2	94.5	.75	12.4	97	104.3	102.4	102.9
29	Illinois Hybrid 126 (Oakes).....	96.3	95.7	.60	13.0	93	100.0	103.7	102.8
30	Iowaleth Hybrid C1.....	95.0	94.5	.49	12.3	96	103.2	102.4	102.6
31	Seeber Hybrid 11A.....	95.3	95.1	.21	11.2	93	100.0	103.0	102.3
32	Iowaleth Hybrid 25.....	94.9	94.3	.64	12.2	94.5	101.6	102.2	102.1
33	Funk Hybrid G-53.....	93.9	93.6	.28	12.2	96	103.2	101.4	101.9
34	DeKalb Hybrid 892.....	96.5	94.8	1.73	13.1	92	98.9	102.7	101.8
35	Funk Hybrid G-212.....	94.6	93.4	1.24	12.4	96	103.2	101.2	101.7
36	Null Hybrid N-27.....	94.0	93.3	.70	12.2	96	103.2	101.1	101.6
37	U. S. Hybrid 35 (P.C.I.A.).....	93.1	92.7	.47	11.2	97	104.3	100.4	101.4
38	U. S. Hybrid 35 (Huey Seed Co.).....	93.3	93.0	.29	11.9	96	103.2	100.7	101.3
39	Illinois Hybrid 972 (Sibley Farms).....	94.0	92.8	1.26	12.2	96	103.2	100.5	101.2
40	*I.H.P. Hybrid D10.....	92.8	92.0	.81	13.0	98	105.4	99.7	101.1
41	U. S. Hybrid 14 (Ferris).....	93.0	92.6	.39	13.4	96	103.2	100.3	101.0
42	Stiegelmeier Hybrid 100.....	93.5	92.9	.62	13.5	94.5	101.6	100.6	100.9
43	*Mountjoy Hybrid 2120.....	95.8	95.1	.69	13.1	87.5	94.1	103.0	100.8
44	*M-L Hybrid 850 (Moews-Lowe).....	92.4	92.2	.26	13.4	96	103.2	99.9	100.7
45	Stiegelmeier Hybrid 802.....	94.1	93.5	.69	14.0	90	96.8	101.3	100.2
46	National Hybrid 126 $\frac{1}{2}$ (Brooks).....	91.6	90.7	1.00	12.9	98	105.4	98.3	100.1
47	Pioneer Hi-Bred 307.....	92.2	91.1	1.24	12.3	94	101.1	98.7	99.3
48	DeKalb Hybrid 800.....	89.2	88.4	.88	12.3	100	107.5	95.8	98.7
49	*Crow Hybrid 608.....	89.5	89.0	.53	12.6	97	104.3	96.4	98.4
50	Illinois Hybrid 499 (Burrus).....	91.8	91.4	.39	13.6	88.5	95.2	99.0	98.1
51	*I.H.P. Hybrid D8A.....	90.2	89.3	1.02	14.2	94	101.1	96.7	97.8
52	M-L Hybrid 514 (Moews-Lowe).....	88.2	87.8	.46	12.2	96	103.2	95.1	97.1
53	DeKalb Hybrid 825.....	86.7	86.2	.56	12.1	98	105.4	93.4	96.4
54	U. S. Hybrid 44 (Moews-Lowe).....	90.0	89.6	.42	11.9	87	93.6	97.1	96.2
55	*Pioneer Hi-Bred 331.....	85.7	85.2	.56	11.9	98	105.4	92.3	95.6
56	Iowaleth Hybrid AQ.....	85.2	84.9	.39	12.1	97	104.3	92.0	95.1
57	National Hybrid 119 $\frac{1}{2}$ (Brooks).....	85.8	85.3	.53	12.5	95	102.2	92.4	94.9
58	Kelly Hybrid K-99.....	84.2	84.0	.29	13.3	98	105.4	91.0	94.6
59	Doubet Yellow Dent.....	91.6	89.7	2.04	13.4	80	86.0	97.2	94.4
60	Pioneer Hi-Bred 313.....	90.6	90.2	.46	12.3	78	83.9	97.7	94.3
61	*E. W. Doubet Hybrid CR-117.....	84.6	84.3	.36	13.0	95	102.2	91.3	94.0
62	*Morgan Hybrid 62.....	89.9	86.1	4.18	11.9	89	95.7	93.3	93.9
63	*Illinois Hybrid 944 (Johnston).....	83.9	83.1	.93	13.3	94	101.1	90.0	92.8
64	Station Yellow Dent.....	87.7	86.6	1.24	14.4	83	89.2	93.8	92.7
65	Illinois Hybrid 960 (P.C.I.A.).....	85.5	83.9	1.82	12.5	90	96.8	90.9	92.4
66	Illinois Hybrid 614 (Canterbury).....	85.1	84.6	.61	13.2	86.5	93.0	91.6	92.0
67	Mountjoy Utility Dent.....	88.2	87.2	1.18	13.6	77	82.8	94.5	91.6
68	● Average of 5 open-pollinated varieties.....	87.5	86.5	1.13	14.4	78.2	84.1	93.7	91.3
69	*Crow Hybrid 640.....	82.9	81.9	1.22	12.7	91	97.9	88.7	91.0
69	*Morgan Hybrid 82.....	83.5	82.8	.84	12.2	88	94.6	89.7	90.9
69	*M-L Hybrid 524 (Moews-Lowe).....	82.6	81.8	1.01	13.1	91	97.9	88.6	90.9
71	Canterbury Yellow Dent.....	84.7	83.8	1.01	15.3	81	87.1	90.8	89.9
72	Illinois Hybrid 960 (Pfeiffer).....	82.4	81.6	.98	11.9	87	93.6	88.4	89.7
73	*Illinois Hybrid 976 (E. W. Doubet).....	79.3	78.8	.69	12.0	94	101.1	85.4	89.3
74	Sommer Yellow Dent.....	85.4	85.2	.20	15.5	70	75.3	92.3	88.1
75	U. S. Hybrid 44 (Frey).....	80.8	79.8	1.18	11.7	85	91.4	86.4	87.7
	Average of all entries.....	93.1	92.3	.83	12.9	93	....	....	....

\*Less than 5 bushels of seed sampled.

A difference of less than 7.7 bushels between total yields of any two entries in this table is not significant.





Table 8B.—Two-, Three-, and Four-Year Summaries at Littleton, West-Central Illinois

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
Average yield of entries grown in 1936, 1937, 1938, 1939									
		<i>bu.</i>	<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	
1	Funk Hybrid G-212.....	75.5	74.7	1.19	15.9	76.3	115.4	110.2	111.5
2	Illinois Hybrid 960.....	74.1	73.2	1.18	16.1	73.4	111.0	108.0	108.8
3	Station Yellow Dent.....	63.3	62.3	2.04	18.1	59.0	89.3	91.9	91.3
●	Average of 5 open-pollinated varieties...	<b>62.2</b>	<b>61.5</b>	<b>1.35</b>	<b>18.0</b>	<b>57.8</b>	<b>87.4</b>	<b>90.7</b>	<b>89.9</b>
4	Mountjoy Utility Dent.....	61.6	61.1	1.17	17.6	55.5	84.0	90.1	88.6
Average of all entries.....		68.6	67.8	1.40	16.9	66.1	....	....	....
Average yield of entries grown in 1937, 1938, 1939									
1	Funk Hybrid G-212.....	88.8	88.0	.95	15.6	73.5	112.6	108.4	109.5
2	Funk Hybrid G-53.....	85.9	85.2	1.09	14.9	79.7	122.1	104.9	109.2
3	Pioneer Hi-Bred 307.....	86.8	85.8	1.30	15.8	69.5	106.4	105.7	105.9
4	U. S. Hybrid 44.....	85.6	84.6	1.27	15.4	67.7	103.7	104.2	104.1
5	Illinois Hybrid 960.....	84.3	83.5	1.06	15.8	70.3	107.7	102.8	104.0
6	Station Yellow Dent.....	75.6	74.7	1.72	17.7	56.2	86.1	92.0	90.5
7	Doubet Yellow Dent.....	74.5	73.6	1.17	17.4	55.0	84.2	90.6	89.0
●	Average of 5 open-pollinated varieties...	<b>75.0</b>	<b>74.3</b>	<b>.98</b>	<b>17.8</b>	<b>52.6</b>	<b>80.6</b>	<b>91.5</b>	<b>88.8</b>
8	Mountjoy Utility Dent.....	74.5	74.0	.77	17.5	50.3	77.0	91.1	87.6
Average of all entries.....		82.0	81.2	1.17	16.3	65.3	....	....	....
Average yield of entries grown in 1938 and 1939									
1	U. S. Hybrid 13.....	83.4	82.7	.88	15.9	75.5	110.5	111.8	111.5
2	U. S. Hybrid 35.....	79.0	78.5	.79	15.1	77.0	112.7	106.1	107.8
3	Funk Hybrid G-94.....	78.0	77.3	1.17	16.7	76.5	112.0	104.5	106.4
4	DeKalb Hybrid 827.....	78.1	77.1	1.46	15.0	76.5	112.0	104.2	106.2
5	M-L Hybrid 514 (Moews-Lowe).....	78.3	77.5	1.14	14.3	73.5	107.6	104.7	105.4
6	Funk Hybrid G-212.....	78.7	77.8	1.11	14.6	72.3	105.9	105.1	105.3
7	U. S. Hybrid 5.....	78.9	77.6	1.74	14.6	72.0	105.4	104.9	105.0
8	Iowa Hybrid CI.....	78.3	77.6	1.00	14.6	70.0	102.5	104.9	104.3
9	Pioneer Hi-Bred 307.....	78.2	77.0	1.54	14.7	70.5	103.2	104.1	103.9
10	Funk Hybrid G-53.....	74.8	74.0	1.29	14.2	77.5	113.5	100.0	103.4
11	National Hybrid 119.....	76.3	75.5	1.12	14.5	72.5	106.1	102.0	103.0
12	Pioneer Hi-Bred 313.....	76.9	76.6	.36	14.0	59.5	87.1	103.5	99.4
13	Iowa Hybrid AQ.....	72.6	71.9	1.01	14.2	72.0	105.4	97.2	99.3
14	Illinois Hybrid 960.....	72.5	71.5	1.45	14.5	68.0	99.6	96.6	97.4
15	U. S. Hybrid 44.....	73.5	72.4	1.60	13.8	64.0	93.7	97.8	96.8
16	Station Yellow Dent.....	67.9	66.5	2.37	16.4	58.5	85.6	89.9	88.8
17	Doubet Yellow Dent.....	66.8	65.6	1.54	16.5	56.0	82.0	88.6	87.0
●	Average of 5 open-pollinated varieties...	<b>66.0</b>	<b>65.1</b>	<b>1.25</b>	<b>16.8</b>	<b>55.4</b>	<b>81.1</b>	<b>88.0</b>	<b>86.3</b>
18	Mountjoy Utility Dent.....	65.4	64.8	.99	16.9	54.5	79.8	87.6	85.7
19	Sommer Yellow Dent.....	65.3	64.8	.93	17.5	50.5	73.9	87.6	84.2
Average of all entries.....		74.9	74.0	1.24	15.2	68.3	....	....	....

(For a two-year summary of lodging-resistance on this field see page 195.)

Table 9.—EAST-CENTRAL ILLINOIS: Paxton

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
1939									
1	Sibley Farms Hybrid 753B.....	80.1	79.2	1.12	14.4	95	99.2	113.1	109.6
2	Pioneer Hi-Bred 313.....	79.7	77.8	2.36	13.1	100	104.4	111.1	109.4
3	Bear Hybrid OK-60.....	78.9	78.7	.26	13.1	93	97.1	112.4	108.5
4	U. S. Hybrid 44 (Frey).....	79.1	76.8	2.86	13.2	99	103.3	109.7	108.1
5	*Illinois Hybrid 201 (Holmes).....	78.8	76.8	2.52	13.6	95	99.2	109.7	107.0
6	*Crow Hybrid 607.....	78.9	76.7	2.83	13.1	94	98.1	109.5	106.7
7	Hoosier Crost Hybrid 668-L.....	78.8	75.8	3.76	13.6	98	102.3	108.2	106.7
8	DeKalb Hybrid 888.....	77.3	76.8	.70	13.8	93	97.1	109.7	106.5
9	Pioneer Hi-Bred 307.....	77.0	75.4	2.08	12.8	98	102.3	107.7	106.3
10	Stiegelmeier Hybrid 904.....	78.2	75.0	4.04	13.7	99	103.3	107.1	106.1
10	U. S. Hybrid 44 (Moews-Lowe).....	76.8	74.7	2.79	13.2	100	104.4	106.7	106.1
12	*Null Hybrid N-16.....	77.3	76.0	1.65	13.7	94	98.1	108.5	105.9
12	Hoosier Crost Hybrid 644.....	76.6	74.5	2.68	13.3	100	104.4	106.4	105.9
14	Seeber Hybrid 11A.....	76.7	74.6	2.68	13.5	98	102.3	106.5	105.5
15	*M-L Hybrid 850 (Moews-Lowe).....	76.2	75.3	1.16	14.1	93	97.1	107.5	104.9
16	Illinois Hybrid 206 (Burrus).....	74.7	74.2	.69	13.4	97	101.3	105.9	104.8
17	Illinois Hybrid 960 (Pfeifer).....	76.1	74.5	2.09	13.3	95	99.2	106.4	104.6
18	*Bear Hybrid OK-64.....	74.8	73.9	1.19	14.2	97	101.3	105.5	104.5
18	*Pioneer Hi-Bred 331.....	73.7	73.2	.63	13.5	100	104.4	104.5	104.5
20	Kelly Hybrid K-100.....	76.8	74.3	3.25	13.4	95	99.2	106.1	104.4
20	Illinois Hybrid 499 (Whisnand).....	78.6	74.0	5.79	13.4	96.5	100.7	105.7	104.4
22	U. S. Hybrid 14 (Ferris).....	74.9	73.1	2.46	13.2	98	102.3	104.4	103.9
23	Kelly Hybrid K-374.....	77.2	73.4	4.87	13.4	96	100.2	104.8	103.7
24	*Bear Hybrid OK-73.....	75.7	73.0	3.62	13.6	97	101.3	104.2	103.5
25	Iowearth Hybrid A.Q.....	74.1	72.1	2.70	13.4	100	104.4	102.9	103.3
26	Funk Hybrid G-94.....	74.0	73.0	1.33	13.6	96	100.2	104.2	103.2
27	Sibley Farms Hybrid 753A.....	77.4	73.4	5.16	14.1	94	98.1	104.8	103.1
28	Funk Hybrid G-212.....	72.6	71.6	1.31	13.1	100	104.4	102.2	102.8
29	U. S. Hybrid 13 (P.C.I.A.).....	74.2	71.5	3.60	14.1	100	104.4	102.1	102.7
30	Illinois Hybrid 614 (Canterbury).....	74.3	73.3	1.28	13.3	91	95.0	104.7	102.2
30	DeKalb Hybrid 606.....	73.5	71.6	2.57	13.4	98	102.3	102.2	102.2
30	Pioneer Hi-Bred 317.....	72.6	71.6	1.36	13.3	98	102.3	102.2	102.2
30	*Illinois Hybrid 976 (Doubet).....	72.6	71.3	1.85	13.4	99	103.3	101.8	102.2
34	Stiegelmeier Hybrid 100.....	74.3	73.4	1.21	14.1	89	92.9	104.8	101.8
35	*I.H.P. Hybrid D11.....	75.5	71.6	5.16	13.8	96	100.2	102.2	101.7
35	*M-L Hybrid 524 (Moews-Lowe).....	73.0	71.1	2.60	13.7	98	102.3	101.5	101.7
37	*M-L Hybrid 514 (Moews-Lowe).....	76.0	70.3	7.52	13.5	100	104.4	100.4	101.4
38	*Funk Hybrid G-71.....	73.8	71.4	3.22	12.7	95	99.2	101.9	101.3
39	*U. S. Hybrid 13 (Holmes).....	74.5	70.1	5.96	13.3	100	104.4	100.1	101.2
40	Stiegelmeier Hybrid 44.....	71.9	71.5	.57	12.8	94	98.1	102.1	101.1
41	Illinois Hybrid 582 (P.C.I.A.).....	72.8	71.3	2.01	13.4	94	98.1	101.8	100.9
42	Stiegelmeier Hybrid 38.....	72.4	69.5	4.05	13.4	100	104.4	99.2	100.5
43	*Illinois Hybrid 200 (Holmes).....	73.3	70.5	3.81	14.3	95	99.2	100.7	100.3
44	Illinois Hybrid 126 (Oakes).....	71.0	69.8	1.75	14.7	97	101.3	99.7	100.1
44	Crow Hybrid 608.....	70.5	69.4	1.50	13.2	99	103.3	99.1	100.1
46	DeKalb Hybrid 648.....	71.3	68.5	3.99	13.4	100	104.4	97.8	99.5
47	Iowearth Hybrid 25.....	73.0	68.9	5.62	13.3	98	102.3	98.4	99.4
48	Stiegelmeier Hybrid 901.....	71.7	69.0	3.71	13.5	97	101.3	98.5	99.2
49	Illinois Hybrid 571 (Mosgrove).....	72.9	68.6	5.87	13.5	98	102.3	97.9	99.0
50	National Hybrid 131 (Brooks).....	71.3	68.5	3.90	13.4	98	102.3	97.8	98.9
51	DeKalb Hybrid 628.....	70.6	68.6	2.89	13.3	96	100.2	97.9	98.5
52	*Illinois Hybrid 944 (Johnston).....	71.4	68.3	4.40	13.0	96	100.2	97.5	98.2
53	Funk Hybrid G-571 (W).....	68.8	68.4	.58	13.6	94	98.1	97.7	97.8
53	Funk Hybrid G-33.....	69.6	68.2	2.07	14.1	95	99.2	97.4	97.8
53	U. S. Hybrid 35 (P.C.I.A.).....	68.0	67.2	1.16	13.2	99	103.3	96.0	97.8
56	Funk Hybrid G-53.....	70.0	67.7	3.22	13.3	96	100.2	96.7	97.5
57	National Hybrid 126 (Brooks).....	69.4	66.5	4.20	13.1	99	103.3	95.0	97.0
58	*Pioneer Hi-Bred 502 (W).....	66.2	66.0	.23	14.4	100	104.4	94.2	96.8
59	Crow Hybrid 804.....	70.8	67.4	4.82	13.9	94	98.1	96.2	96.7
60	Hoosier Crost Hybrid 670.....	70.8	66.7	5.80	13.1	96	100.2	95.2	96.5
61	Kelly Hybrid K-88.....	69.5	65.1	6.33	13.3	99	103.3	93.0	95.5
62	DeKalb Hybrid 827.....	67.6	65.4	3.19	13.1	97	101.3	93.4	95.4
62	Crow Hybrid 603.....	67.2	65.0	3.30	13.1	99	103.3	92.8	95.4
64	Mountjoy Utility Dent.....	67.0	65.9	1.69	13.4	86	89.8	94.1	93.0
64	*I.H.P. Hybrid D13.....	65.7	63.2	3.77	13.6	97	101.3	90.2	93.0
66	DeKalb Hybrid 821.....	65.8	64.7	1.62	13.4	90	93.9	92.4	92.8
67	Iowearth Hybrid 30.....	64.1	62.4	2.60	13.4	96	100.2	89.1	91.9
68	*I.H.P. Hybrid D12.....	65.7	60.7	7.54	14.5	95	99.2	86.7	89.8
69	Doubet Yellow Dent.....	65.0	63.1	2.88	13.7	82	85.6	90.1	89.0
70	DeKalb Hybrid 639.....	59.0	58.9	.18	13.3	96	100.2	84.1	88.1
● Average of 5 open-pollinated varieties.....		<b>64.5</b>	<b>62.3</b>	<b>4.43</b>	<b>13.6</b>	<b>81.8</b>	<b>85.4</b>	<b>83.9</b>	<b>83.0</b>
71	Canterbury Yellow Dent.....	63.7	61.1	4.04	13.8	86	89.8	87.2	87.9
72	Crow Hybrid 605.....	61.8	57.0	7.82	13.4	97	101.3	81.4	86.4
73	Station Yellow Dent.....	65.4	61.0	6.68	13.7	79	82.5	87.1	85.9
74	Sommer Yellow Dent.....	61.3	60.2	1.86	13.4	76	79.3	86.0	84.3
75	*Pioneer Hi-Bred 501 (W).....	54.9	53.8	2.03	14.5	100	104.4	76.8	83.7
Average of all entries.....		72.2	70.0	3.02	13.5	95.8	.....	.....	.....

\*Less than 5 bushels of seed sampled.

A difference of less than 5.1 bushels between total yields of any two entries in this table is not significant.

Table 9A.—Two-, Three-, and Four-Year Summaries at Paxton, East-Central Illinois

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
Average yield of entries grown in 1936, 1937, 1938, 1939									
		<i>bu.</i>	<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	
1	Illinois Hybrid 960.....	71.3	70.3	1.47	15.5	83.6	119.8	115.4	116.5
2	Funk Hybrid G-212.....	66.8	65.9	1.51	15.1	61.4	88.0	108.2	103.2
3	Station Yellow Dent.....	55.6	54.1	2.84	17.3	69.2	99.1	88.8	91.4
●	Average of 5 open-pollinated varieties...	<b>54.9</b>	<b>54.0</b>	<b>2.33</b>	<b>16.7</b>	<b>67.9</b>	<b>97.3</b>	<b>88.7</b>	<b>90.9</b>
4	Mountjoy Utility Dent.....	54.2	53.2	2.68	16.1	64.8	92.8	87.4	88.8
Average of all entries.....		62.0	60.9	2.13	16.0	69.8	....	....	....
Average yield of entries grown in 1937, 1938, 1939									
1	U. S. Hybrid 44.....	71.2	69.3	2.90	14.6	93.3	108.9	108.6	108.7
2	Illinois Hybrid 960.....	71.0	70.0	1.49	13.2	88.7	103.5	109.7	108.2
3	Pioneer Hi-Bred 317.....	69.6	68.7	1.32	14.3	90.8	106.0	107.7	107.3
3	Pioneer Hi-Bred 307.....	69.9	68.4	2.42	13.5	92.0	107.4	107.2	107.3
5	Funk Hybrid G-33.....	67.5	67.0	.72	14.7	87.8	102.5	105.0	104.4
6	Funk Hybrid G-212.....	66.3	65.4	1.32	13.9	88.7	103.5	102.5	102.8
7	Funk Hybrid G-53.....	65.0	63.9	1.76	14.1	89.7	104.7	100.2	101.3
8	Station Yellow Dent.....	57.2	55.6	2.66	16.1	75.3	87.9	87.1	87.3
●	Average of 5 open-pollinated varieties...	<b>56.5</b>	<b>55.6</b>	<b>2.15</b>	<b>15.5</b>	<b>75.1</b>	<b>87.6</b>	<b>87.1</b>	<b>87.2</b>
9	Doubet Yellow Dent.....	54.8	54.0	1.59	15.3	78.5	91.6	84.6	86.4
10	Mountjoy Utility Dent.....	56.7	55.5	2.71	14.7	72.0	84.0	87.0	86.3
Average of all entries.....		64.9	63.8	1.89	14.4	85.7	....	....	....
Average yield of entries grown in 1938 and 1939									
1	Bear Hybrid OK-60.....	69.4	68.9	.89	13.2	89.5	102.9	114.6	111.7
2	Pioneer Hi-Bred 313.....	70.4	69.0	2.01	13.6	86.8	99.8	114.8	111.1
3	U. S. Hybrid 44.....	69.4	66.6	4.20	13.5	94.5	108.6	110.8	110.3
4	Illinois Hybrid 960.....	66.9	65.5	2.05	13.3	88.5	101.7	109.0	107.2
5	Pioneer Hi-Bred 307.....	66.5	64.3	3.62	12.7	91.8	105.5	107.0	106.6
6	Funk Hybrid G-94.....	64.7	63.6	1.77	14.6	93.0	106.9	105.8	106.1
7	M-L Hybrid 524 (Moews-Lowe).....	65.5	64.2	1.98	13.7	89.8	103.2	106.8	105.9
8	U. S. Hybrid 13.....	64.8	62.7	2.98	14.5	94.8	109.0	104.3	105.5
9	Pioneer Hi-Bred 317.....	64.7	63.7	1.59	13.3	90.0	103.4	106.0	105.4
10	Iowaleth Hybrid A-Q.....	62.5	60.8	2.72	13.1	93.8	107.8	101.2	102.9
11	Funk Hybrid G-33.....	62.0	61.3	1.08	14.1	86.3	99.2	102.0	101.3
12	Funk Hybrid G-212.....	61.3	60.2	1.76	12.9	87.5	100.6	100.2	100.3
13	Crow Hybrid 804.....	62.5	60.6	2.84	14.0	82.0	94.3	100.8	99.2
14	Funk Hybrid G-53.....	59.9	58.3	2.60	13.1	91.0	104.6	97.0	98.9
15	Crow Hybrid 608.....	58.6	57.7	1.43	13.7	90.8	104.4	96.0	98.1
16	Crow Hybrid 603.....	56.5	55.4	1.70	12.6	87.0	100.0	92.2	94.2
17	Doubet Yellow Dent.....	50.6	49.3	2.39	14.0	81.8	94.0	82.0	85.0
18	Station Yellow Dent.....	52.5	50.0	3.99	14.8	76.3	87.7	83.2	84.3
●	Average of 5 open-pollinated varieties...	<b>51.4</b>	<b>50.0</b>	<b>3.21</b>	<b>14.3</b>	<b>75.6</b>	<b>86.9</b>	<b>83.2</b>	<b>84.1</b>
19	Sommer Yellow Dent.....	51.1	50.5	1.04	14.2	71.3	82.0	84.0	83.5
20	Mountjoy Utility Dent.....	50.7	49.0	4.0	13.8	73.0	83.9	81.5	82.1
Average of all entries.....		61.5	60.1	2.33	13.6	87.0	....	....	....



Table 10.—SOUTH-CENTRAL ILLINOIS: Sullivan

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
1939									
1	*Funk Hybrid G-80.....	107.0	105.5	1.42	15.7	96.5	108.8	112.0	111.2
2	Funk Hybrid G-83.....	109.1	106.9	2.00	15.8	91	102.6	113.5	110.8
3	Illinois Hybrid 877 (Livengood).....	105.5	104.6	.90	13.9	86.5	97.6	111.0	107.7
4	*Null-Vollmer Hybrid 10 (Vollmer).....	101.2	100.7	.46	13.2	95	107.2	107.0	107.0
5	Null Hybrid N-61.....	101.6	101.2	.34	12.9	92	103.8	107.5	106.6
6	*Null Hybrid N-43.....	107.0	100.4	6.19	14.7	93.5	105.5	106.6	106.3
7	DeKalb Hybrid 899.....	104.4	102.8	1.49	15.5	85.5	96.4	109.2	106.0
7	*Bear Hybrid OK-80.....	101.2	100.5	.67	14.0	92	103.8	106.7	106.0
9	*Illinois Hybrid 200 (Henley).....	101.8	99.7	2.08	13.4	90	101.5	105.9	105.8
10	*Illinois Hybrid 805 (Holmes).....	103.3	100.6	2.66	13.1	90.5	102.1	106.8	105.6
11	Illinois Hybrid 863 (Burrus).....	104.0	102.5	1.47	14.7	84.5	95.3	108.8	105.5
12	Illinois Hybrid 784 (Pfeifer).....	102.9	100.5	2.28	15.5	89.5	101.0	106.7	105.3
13	*Crow Hybrid 806.....	102.2	100.9	1.20	15.7	87	98.1	107.2	104.9
14	Illinois Hybrid 885A (Henley).....	104.4	101.5	2.75	12.9	85	95.9	107.8	104.8
15	*M-L Hybrid 525 (Moews-Lowe).....	98.1	97.0	1.14	14.0	96	108.3	103.0	104.3
16	DeKalb Hybrid 816.....	101.0	98.1	2.92	13.2	91.5	103.2	104.2	104.0
17	Funk Hybrid G-167.....	102.1	99.6	2.46	15.7	87	98.1	105.8	103.9
18	U. S. Hybrid 13 (Henley).....	97.9	96.0	1.90	14.0	96	108.3	102.0	103.6
19	Illinois Hybrid 432 (Livengood).....	102.4	99.2	3.08	14.7	86	97.0	105.4	103.3
20	*Bear Hybrid OK-74.....	97.0	96.5	.48	12.7	92	103.8	102.5	102.8
21	U. S. Hybrid 44 (Moews-Lowe).....	96.6	95.5	1.15	12.9	94	106.0	101.4	102.6
22	Illinois Hybrid 126 (Oakes).....	95.6	95.0	.63	13.1	95	107.2	100.9	102.5
23	Funk Hybrid G-123.....	97.9	96.1	1.84	14.4	91	102.6	102.1	102.2
23	*M-L Hybrid 850 (Moews-Lowe).....	96.3	95.9	.40	13.5	91.5	103.2	101.9	102.2
25	Kelly Hybrid K-374.....	96.3	94.8	1.56	12.9	94	106.0	100.6	102.0
26	Bear Hybrid OK-30.....	96.7	96.4	.29	13.4	89	100.4	102.3	101.9
27	Funk Hybrid G-527 (W).....	99.3	97.7	1.54	14.9	83.5	94.2	103.8	101.4
28	Illinois Hybrid 499 (Whisnand).....	97.0	94.3	2.76	14.4	91.5	103.2	100.1	100.9
29	Crow Hybrid 603.....	93.0	92.6	.42	12.7	96	108.3	98.3	100.8
30	Pioneer Hi-Bred 313.....	96.3	95.3	1.00	13.6	88	99.3	101.2	100.7
31	Iowa Hybrid 28N.....	95.1	94.8	.32	14.0	88	99.3	100.7	100.4
32	DeKalb Hybrid 918 (W).....	98.9	97.4	1.55	16.0	80.5	90.8	103.4	100.3
33	Funk Hybrid G-46.....	95.7	92.9	2.87	14.6	93	104.9	98.7	100.2
34	Illinois Hybrid 947 (Koch).....	94.8	93.9	1.03	13.4	89.5	101.0	99.7	100.0
35	*Seeber Hybrid 9.....	95.3	93.8	1.56	13.8	88.5	99.8	99.6	99.7
36	Bear Hybrid OK-60.....	95.1	94.6	.53	14.0	85	95.9	100.5	99.3
36	*I.H.P. Hybrid 411.....	96.8	91.4	5.62	13.3	94	106.0	97.1	99.3
38	Stiegelmeier Hybrid 905.....	94.3	93.1	1.24	13.8	87.5	98.7	98.9	98.8
39	DeKalb Hybrid 888.....	94.7	92.1	2.71	14.5	89.5	101.0	97.9	98.6
40	*Null-Vollmer Hybrid 20 (Vollmer).....	92.1	89.2	3.12	14.0	95.5	107.7	94.7	98.0
41	Funk Hybrid G-235.....	94.5	91.2	3.47	13.1	88	99.3	96.9	97.5
42	Illinois Hybrid 614 (Canterbury).....	92.2	91.7	.61	14.4	86.5	97.6	97.4	97.4
43	DeKalb Hybrid 891.....	89.0	88.5	.51	14.4	91	102.6	94.0	96.2
44	Bunning White Dent.....	94.7	92.5	2.38	15.2	78.5	88.5	98.2	95.8
44	Rice White Dent.....	94.3	92.0	2.40	14.4	80	90.2	97.7	95.8
44	Illinois Hybrid 710 (Nickel Bros.).....	91.3	90.5	.90	14.4	84	94.7	96.1	95.8
47	Wilson Yellow Dent.....	92.8	91.4	1.51	14.4	80	90.2	97.0	95.3
48	Iowa Hybrid 30.....	89.4	88.2	1.42	14.4	88	99.3	93.6	95.0
49	Illinois Hybrid 582 (Burrus).....	93.0	90.3	2.92	12.7	81.5	91.9	95.9	94.9
50	Pioneer Hi-Bred 307.....	86.9	85.6	1.58	13.8	93	104.9	90.9	94.4
51	*Pioneer Hi-Bred 502 (W).....	91.0	90.4	.71	15.6	78.5	88.5	96.0	94.1
51	*Pioneer Hi-Bred 501 (W).....	87.5	87.2	.35	16.9	87.5	98.7	92.6	94.1
53	Illinois Hybrid 863 (Whisnand).....	91.9	88.3	3.90	14.7	83.5	94.2	93.8	93.9
53	DeKalb Hybrid 825.....	84.1	83.6	.56	12.7	97	109.4	88.8	93.9
● Average of 5 open-pollinated varieties.....		91.3	89.6	1.91	14.6	79.3	89.4	95.1	93.7
55	*M-L Hybrid 520 (Moews-Lowe).....	86.4	84.1	2.70	12.7	95	107.2	89.3	93.7
56	DeKalb Hybrid 922 (W).....	87.7	86.4	1.52	16.9	87.5	98.7	91.7	93.5
57	Canterbury Yellow Dent.....	91.0	88.7	2.50	14.6	79	89.1	94.2	92.9
58	Crow Hybrid 804.....	85.8	83.1	3.07	16.4	91	102.6	88.3	91.9
59	National Hybrid 132i (Brooks).....	82.9	82.0	1.04	18.7	91	102.6	87.1	91.0
60	Shuman Golden Beauty.....	83.8	83.2	.76	14.2	79	89.1	88.4	88.5
61	Crow Hybrid 701 (W).....	85.4	83.6	2.14	16.9	77	86.9	88.8	88.3
Average of all entries.....		95.9	94.2	1.75	14.3	88.7	....	....	....

\*Less than 5 bushels of seed sampled.

A difference of less than 5.2 bushels between total yields  
of any two entries in this table is not significant.

Table 10A.—Two-, Three-, and Four-Year Summaries at Sullivan, South-Central Illinois

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
Average yield of entries grown in 1936, 1937, 1938, 1939									
		<i>bu.</i>	<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	
1	Funk Hybrid G-235.....	76.4	75.0	2.03	16.2	71.4	109.5	102.2	104.0
2	Bunning White Dent.....	73.9	72.9	2.05	17.8	62.7	96.2	99.3	98.5
3	Rice White Dent.....	73.2	72.2	1.61	17.7	61.4	94.2	98.4	97.4
●	Average of 5 open-pollinated varieties...	<b>70.6</b>	<b>69.7</b>	<b>1.72</b>	<b>18.1</b>	<b>62.7</b>	<b>96.2</b>	<b>95.0</b>	<b>95.3</b>
	Average of all entries.....	74.5	73.4	1.90	17.2	65.2	....	....	....
Average yield of entries grown in 1937, 1938, 1939									
1	Funk Hybrid G-46.....	93.9	91.9	2.40	17.6	81.0	111.4	103.7	105.6
2	DeKalb Hybrid 825.....	88.4	88.1	.32	16.5	88.1	121.2	99.4	104.9
3	Funk Hybrid G-235.....	92.3	90.9	1.56	16.1	77.2	106.2	102.6	103.5
4	Illinois Hybrid 863.....	94.0	92.3	2.02	17.7	70.7	97.2	104.2	102.5
5	Bunning White Dent.....	93.5	92.7	.98	16.9	63.6	87.5	104.6	100.3
6	Illinois Hybrid 947.....	86.6	86.0	.67	16.7	76.0	104.5	97.1	99.0
7	Rice White Dent.....	90.6	89.6	1.13	17.3	61.7	84.9	101.1	97.1
●	Average of 5 open-pollinated varieties...	<b>87.7</b>	<b>86.9</b>	<b>1.07</b>	<b>17.5</b>	<b>63.3</b>	<b>87.1</b>	<b>98.1</b>	<b>95.4</b>
8	Shuman Golden Beauty.....	77.4	77.2	.34	17.7	63.0	86.7	87.1	87.0
	Average of all entries.....	89.6	88.6	1.18	17.1	72.7	....	....	....
Average yield of entries grown in 1938 and 1939									
1	Illinois Hybrid 784.....	93.3	90.4	3.11	17.8	81.3	107.3	111.7	110.6
2	Bear Hybrid OK-30.....	87.2	86.9	.28	14.9	80.0	105.5	107.4	106.9
3	Bear Hybrid OK-60.....	85.6	85.3	.36	15.2	77.0	101.6	105.4	104.5
4	DeKalb Hybrid 918 (W).....	85.5	84.7	.84	17.4	77.5	102.2	104.7	104.1
5	Pioneer Hi-Bred 313.....	88.8	88.3	.58	16.3	66.5	87.7	109.1	103.8
6	DeKalb Hybrid 825.....	80.8	80.5	.29	14.7	86.3	113.9	99.5	103.1
7	Funk Hybrid G-46.....	84.6	81.7	3.46	16.6	80.0	105.5	101.0	102.1
8	Iowa Hybrid 30.....	81.9	81.2	.79	15.9	76.5	100.9	100.4	100.5
9	Pioneer Hi-Bred 307.....	81.0	80.0	1.37	15.2	79.8	105.3	98.9	100.5
10	Crow Hybrid 603.....	79.8	79.4	.57	13.9	80.5	106.2	98.1	100.1
11	Bunning White Dent.....	84.4	83.2	1.42	16.3	69.5	91.7	102.8	100.0
12	Illinois Hybrid 947.....	80.0	79.4	.73	15.6	76.8	101.3	98.1	98.9
13	Funk Hybrid G-235.....	81.1	79.1	2.33	15.0	77.3	102.0	97.8	98.9
14	Illinois Hybrid 863.....	81.9	79.7	2.78	16.6	75.0	98.9	98.5	98.6
15	Canterbury Yellow Dent.....	80.6	79.3	1.37	16.9	72.5	95.6	98.0	97.4
16	Wilson Yellow Dent.....	80.8	78.8	2.68	16.5	73.8	97.4	97.4	97.4
17	Rice White Dent.....	80.6	79.1	1.70	15.9	69.3	91.4	97.8	96.2
●	Average of 5 open-pollinated varieties...	<b>79.5</b>	<b>78.2</b>	<b>1.54</b>	<b>16.3</b>	<b>71.5</b>	<b>94.3</b>	<b>96.7</b>	<b>96.1</b>
18	Crow Hybrid 804.....	77.1	75.1	2.50	16.7	73.0	96.3	92.8	93.7
19	Crow Hybrid 701 (W).....	75.6	74.4	1.51	17.3	70.5	93.0	92.0	92.3
20	Shuman Golden Beauty.....	71.0	70.7	.51	15.9	72.5	95.6	87.4	89.5
	Average of all entries.....	82.1	80.9	1.46	16.0	75.8	....	....	....

Table 11.—SOUTHERN ILLINOIS: Shobonier

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
1939		bu.	bu.	perct.	perct.	perct.	perct.	perct.	
1	Iowaleth Hybrid 29A.....	62.6	61.9	1.18	11.4	98	101.3	113.1	110.2
2	*Illinois Hybrid 200 (Pfeifer).....	61.3	61.0	.54	12.5	97	100.3	111.5	108.7
3	DeKalb Hybrid 922 (W).....	60.9	60.3	1.02	12.9	96	99.2	110.2	107.5
3	Funk Hybrid G-123.....	62.1	60.1	3.18	12.0	97	100.3	109.9	107.5
5	*Bear Hybrid OK-78.....	60.4	59.7	1.18	11.7	99	102.3	109.1	107.4
6	Sager Hybrid 33A (W).....	60.1	59.7	.70	11.7	98	101.3	109.1	107.2
7	*I.H.P. Hybrid 455.....	60.5	59.8	1.22	12.9	95	98.2	109.3	106.5
7	Illinois Hybrid 877 (Livengood).....	60.1	59.4	1.22	11.8	97	100.3	108.6	106.5
9	*M-L Hybrid 850 (Moevs-Lowe).....	59.4	59.0	.74	12.7	99	102.3	107.8	106.4
10	DeKalb Hybrid 892.....	59.4	58.8	.93	11.8	98	101.3	107.5	106.0
11	National Hybrid 129 (Brooks).....	60.2	59.1	1.76	11.4	96	99.2	108.0	105.8
11	*Bear Hybrid OK-65.....	59.1	58.5	1.04	11.4	99	102.3	106.9	105.8
11	U. S. Hybrid 13 (Henley).....	59.0	58.3	1.20	11.3	100	103.4	106.6	105.8
14	Illinois Hybrid 885A (Henley).....	59.5	58.4	1.77	11.3	99	102.3	106.7	105.6
15	Illinois Hybrid 784 (Pfeifer).....	60.1	58.9	2.04	11.4	94	97.2	107.7	105.1
15	*Bear Hybrid OK-90.....	58.9	58.6	.58	12.8	96	99.2	107.1	105.1
17	*Bear Hybrid OK-80.....	58.2	57.6	1.07	11.8	96	99.2	105.3	103.8
17	DeKalb Hybrid 888.....	57.8	57.2	1.10	11.5	98	101.3	104.6	103.8
19	Funk Hybrid G-90.....	57.4	56.7	1.15	12.3	97	100.3	103.6	102.8
20	Funk Hybrid G-84.....	56.6	56.1	.83	11.7	99	102.3	102.5	102.5
20	*M-L Hybrid 520 (Moevs-Lowe).....	56.6	55.9	1.21	11.4	100	103.4	102.2	102.5
22	Funk Hybrid G-125.....	56.4	55.6	1.33	12.9	99	102.3	101.6	101.8
23	DeKalb Hybrid 894.....	56.3	55.8	.90	13.1	97	100.3	102.0	101.6
23	Funk Hybrid G-566 (W).....	56.1	55.8	.59	14.3	97	100.3	102.0	101.6
26	Illinois Hybrid 838 (Holmes).....	56.8	55.9	1.59	13.8	96	99.2	102.2	101.5
26	DeKalb Hybrid 899.....	56.6	56.0	.98	14.0	95	98.2	102.4	101.4
27	DeKalb Hybrid 887.....	55.9	55.6	.52	13.1	96	99.2	101.6	101.0
28	Pioneer Hi-Bred 313.....	54.7	54.5	.29	11.4	100	103.4	99.6	100.6
29	DeKalb Hybrid 816.....	55.5	54.2	2.26	12.0	100	103.4	99.1	100.2
30	DeKalb Hybrid 825.....	55.1	54.2	1.71	10.8	99	102.3	99.1	99.9
31	Funk Hybrid G-527 (W).....	55.4	55.0	.69	13.8	94	97.2	100.5	99.7
31	*Funk Hybrid G-120.....	55.6	54.6	1.84	12.0	96	99.2	99.8	99.7
33	Funk Hybrid G-135.....	55.7	54.7	1.71	12.7	95	98.2	100.0	99.6
34	Funk Hybrid G-167.....	55.1	54.2	1.56	13.1	96	99.2	99.1	99.1
34	*Funk Hybrid G-80.....	53.8	53.6	.44	12.7	99	102.3	98.0	99.1
36	DeKalb Hybrid 918B (W).....	54.7	54.2	.94	12.8	95	98.2	99.1	98.9
37	Iowaleth Hybrid 28N.....	54.4	54.0	.74	12.8	95	98.2	98.7	98.6
38	*Funk Hybrid G-118.....	53.9	53.1	1.52	10.7	99	102.3	97.1	98.4
39	*Pioneer Hi-Bred 502 (W).....	54.3	53.6	1.21	12.9	96	99.2	98.0	98.3
40	*Bear Hybrid OK-64.....	53.5	53.1	.75	13.1	98	101.3	97.1	98.2
41	*I.H.P. Hybrid 222.....	53.1	52.4	1.30	12.5	100	103.4	95.8	97.7
42	Iowaleth Hybrid 29N.....	52.6	52.2	.72	11.4	99	102.3	95.4	97.1
43	*I.H.P. Hybrid 555.....	52.5	51.9	1.09	11.4	98	101.3	94.9	96.5
44	DeKalb Hybrid 891.....	52.6	52.2	.83	14.3	96	99.2	95.4	96.4
45	DeKalb Hybrid 919 (W).....	53.2	52.5	1.32	12.5	94	97.2	96.0	96.3
46	St. Charles White.....	53.5	52.8	1.33	14.7	92	95.1	96.5	96.2
47	*Pioneer Hi-Bred 501 (W).....	50.8	50.5	.52	13.1	98	101.3	92.3	94.6
48	Funk Hybrid G-88.....	50.4	50.0	.74	11.3	99	102.3	91.4	94.1
49	DeKalb Hybrid 917 (W).....	51.2	50.5	1.29	13.5	96	99.2	92.3	94.0
50	Mangelsdorf Hybrid XX-1.....	51.1	50.2	1.73	11.3	95	98.2	91.8	93.4
50	DeKalb Hybrid 883.....	50.3	49.7	1.15	13.1	98	101.3	90.8	93.4
52	Iowaleth Hybrid 53.....	49.1	48.8	.66	15.2	100	103.4	89.2	92.8
53	Moore Yellow Dent.....	50.1	50.0	.29	11.5	93	96.1	91.4	92.6
53	Iowaleth Hybrid 30.....	50.3	49.1	2.45	10.9	98	101.3	89.7	92.6
55	Mohawk.....	50.5	49.3	2.38	13.1	95	98.2	90.1	92.1
●	Average of 6 open-pollinated varieties.....	<b>49.0</b>	<b>48.4</b>	<b>1.23</b>	<b>13.7</b>	<b>91.7</b>	<b>94.8</b>	<b>88.5</b>	<b>90.1</b>
56	McLurkin White Dent.....	48.4	47.8	1.23	14.0	95	98.2	87.4	90.1
57	Champion White Pearl.....	45.1	44.4	1.56	14.1	94	97.2	81.2	85.2
58	Blackhawk.....	46.6	46.3	.56	14.5	81	83.7	84.6	84.4
Average of all entries.....		55.4	54.7	1.18	12.5	96.7	....	....	....

\*Less than 5 bushels of seed sampled.

A difference of less than 9.0 bushels between total yields  
of any two entries in this table is not significant.

Table 11A.—Two- and Three-Year Summaries at Shobonier

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
Average yield of entries grown in 1937, 1938, 1939									
		<i>bu.</i>	<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	
1	Funk Hybrid G-90.....	39.5	39.2	.58	13.1	68.0	121.0	104.0	108.3
2	St. Charles White.....	41.5	41.1	.85	16.5	58.2	103.6	109.0	107.7
●	Average of 5 open-pollinated varieties.....	<b>36.8</b>	<b>36.5</b>	<b>.58</b>	<b>16.0</b>	<b>56.8</b>	<b>101.1</b>	<b>96.8</b>	<b>97.9</b>
3	Champion White Pearl.....	35.7	35.3	.72	17.1	60.2	107.1	93.6	97.0
4	Blackhawk.....	35.3	35.2	.20	17.4	38.2	68.0	93.4	87.1
	Average of all entries.....	38.0	37.7	.59	16.0	56.2	....	....	....
Average yield of entries grown in 1938 and 1939									
1	Illinois Hybrid 784.....	56.6	55.9	1.08	15.2	80.0	103.1	116.0	112.8
2	DeKalb Hybrid 922 (W).....	52.6	52.3	.69	13.9	82.0	105.7	108.5	107.8
3	Illinois Hybrid 877.....	53.2	52.6	.96	12.0	78.0	100.5	109.1	107.0
4	St. Charles White.....	53.6	52.9	1.28	15.2	76.0	97.9	109.8	106.8
5	Funk Hybrid G-125.....	51.2	50.8	.79	13.6	83.8	108.0	105.4	106.1
6	Funk Hybrid G-90.....	51.1	50.6	.80	12.1	82.0	105.7	105.0	105.2
●	Average of 5 open-pollinated varieties.....	<b>48.7</b>	<b>48.2</b>	<b>.86</b>	<b>15.0</b>	<b>74.0</b>	<b>95.4</b>	<b>100.0</b>	<b>98.9</b>
7	Moore Yellow Dent.....	48.0	47.9	.23	13.4	73.8	95.1	99.4	98.3
8	Champion White Pearl.....	46.9	46.4	1.06	15.8	75.8	97.7	96.3	96.7
8	Iowa Hybrid 30.....	45.6	44.9	1.30	11.8	83.0	107.0	93.2	96.7
10	DeKalb Hybrid 917 (W).....	45.8	45.2	1.30	15.4	78.0	100.5	93.8	95.5
11	Blackhawk.....	46.2	46.1	.28	16.4	67.0	86.3	95.6	93.3
12	Iowa Hybrid 53.....	43.0	42.8	.43	13.4	81.2	104.6	88.8	92.8
13	Pioneer Hi-Bred 313.....	44.0	43.8	.34	11.3	73.0	94.1	90.9	91.7
14	Mangelsdorf Hybrid XX-1.....	42.9	42.4	1.06	11.4	73.0	94.1	88.0	89.5
	Average of all entries.....	48.6	48.2	.93	13.6	77.6	....	....	....

Table 12A.—Two- and Three-Year Summaries at Albion

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
Average yield of entries grown in 1937, 1938, 1939									
		<i>bu.</i>	<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	
1	Funk Hybrid G-86.....	80.8	80.6	.27	13.7	91.0	109.3	102.4	104.1
2	Funk Hybrid G-95.....	81.9	80.8	1.06	14.2	85.0	102.1	102.7	102.6
3	St. Charles White.....	79.3	78.4	1.07	15.8	79.2	95.2	99.6	98.5
4	Wilson Yellow Dent.....	75.8	75.0	1.08	13.9	77.7	93.4	95.3	94.8
●	Average of 5 open-pollinated varieties...	<b>75.3</b>	<b>74.5</b>	<b>1.01</b>	<b>15.8</b>	<b>76.0</b>	<b>91.3</b>	<b>94.7</b>	<b>93.9</b>
Average of all entries.....		79.5	78.7	.87	14.4	83.2	....	....	....
Average yield of entries grown in 1938 and 1939									
1	Funk Hybrid G-528 (W).....	85.1	83.5	2.09	12.3	90.5	98.0	110.5	107.4
2	Funk Hybrid G-125.....	84.0	82.5	1.87	11.4	91.5	99.1	109.1	106.6
3	M-L Hybrid 850 (Moews-Lowe).....	81.4	79.4	2.69	12.2	94.5	102.3	105.0	104.3
4	Pioneer Hi-Bred 313.....	80.0	77.6	3.08	12.1	96.5	104.5	102.6	103.1
5	DeKalb Hybrid 922 (W).....	78.3	77.1	1.91	13.7	94.5	102.3	102.0	102.1
6	Funk Hybrid G-527 (W).....	78.5	77.2	1.68	12.7	91.0	98.6	102.1	101.2
7	Funk Hybrid G-95.....	77.4	76.2	1.55	11.8	90.0	97.5	100.8	100.0
8	Funk Hybrid G-86.....	75.2	74.9	.40	12.1	94.0	101.8	99.1	99.8
9	Crow Hybrid 804.....	75.1	73.3	2.65	11.7	96.0	104.0	97.0	98.8
10	St. Charles White.....	74.4	73.9	.72	13.3	91.5	99.1	97.8	98.1
11	Crow Hybrid 701 (W).....	74.9	72.5	3.72	12.8	94.5	102.3	95.9	97.5
12	DeKalb Hybrid 917 (W).....	75.5	71.5	5.76	15.5	92.0	99.6	94.6	95.9
13	Iowa Hybrid 30.....	71.8	70.4	2.09	12.2	95.0	102.9	93.1	95.6
14	Wilson Yellow Dent.....	73.0	72.1	1.33	11.9	87.5	94.8	95.4	95.3
15	Waddell Utility White Dent.....	72.7	72.3	.60	12.9	86.0	93.1	95.6	95.0
●	Average of 5 open-pollinated varieties...	<b>71.4</b>	<b>70.8</b>	<b>.90</b>	<b>13.0</b>	<b>87.9</b>	<b>95.2</b>	<b>93.7</b>	<b>94.1</b>
Average of all entries.....		77.2	75.6	2.14	12.6	92.3	....	....	....



Table 12.—SOUTHEASTERN ILLINOIS: Albion

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
1939									
1	*E. W. Doubet Hybrid D48.....	77.0	75.4	2.14	11.1	99	100.7	113.4	110.2
2	Funk Hybrid G-125.....	77.6	75.7	2.45	10.7	96	97.6	113.9	109.8
3	*Bear Hybrid OK-68.....	77.7	73.6	5.20	10.1	99	100.7	110.8	108.3
4	Funk Hybrid G-83.....	76.4	73.1	4.40	11.4	100	101.7	109.9	107.9
5	*I.H.P. Hybrid 999.....	75.0	72.5	3.35	11.5	100	101.7	109.1	107.2
6	Funk Hybrid G-123.....	74.1	72.2	2.54	11.1	99	100.7	108.7	106.7
7	Funk Hybrid G-84.....	73.8	71.9	2.54	10.8	100	101.7	108.2	106.6
8	*Crow Hybrid 806.....	72.7	71.1	2.14	11.7	97	98.7	107.0	104.9
9	Funk Hybrid G-167.....	71.2	70.6	.93	11.7	99	100.7	106.2	104.8
10	Pioneer Hi-Bred 313.....	73.9	70.4	4.64	10.8	99	100.7	106.0	104.6
11	*M-L Hybrid 850 (Moews-Lowe).....	73.6	69.9	5.02	11.3	100	101.7	105.2	104.3
12	*Funk Hybrid G-101.....	71.4	69.8	2.28	11.8	100	101.7	105.0	104.2
13	*Funk Hybrid G-528 (W).....	72.6	69.7	3.96	11.5	100	101.7	104.9	104.1
14	DeKalb Hybrid 887.....	70.6	69.8	1.25	11.3	98	99.7	104.9	103.6
15	*Bear Hybrid OK-75.....	72.1	69.1	4.16	10.8	100	101.7	104.0	103.4
16	Iowearth Hybrid 28N.....	70.5	69.0	2.15	10.8	100	101.7	103.8	103.3
17	DeKalb Hybrid 888.....	72.8	69.2	4.96	10.6	99	100.7	104.0	103.2
18	*I.H.P. Hybrid 888.....	73.6	68.5	6.98	10.4	100	101.7	103.0	102.7
19	DeKalb Hybrid 918B (W).....	70.1	69.0	1.47	11.4	97	98.7	103.8	102.5
20	*Illinois Hybrid 208 (Holmes).....	73.4	68.5	6.73	10.8	99	100.7	103.0	102.4
21	Iowearth Hybrid 29A.....	71.7	68.2	4.87	11.7	100	101.7	102.6	102.4
22	*Illinois Hybrid 885A (Henley).....	75.2	68.4	9.12	10.7	99	100.7	102.8	102.3
23	DeKalb Hybrid 899.....	72.0	68.2	5.32	11.4	100	101.7	102.5	102.3
24	*Pioneer Hi-Bred 502 (W).....	68.9	68.4	.70	10.6	98	99.7	102.9	102.1
25	Funk Hybrid G-135.....	71.8	67.9	5.46	11.8	100	101.7	102.1	102.0
26	Funk Hybrid G-95.....	70.0	68.5	2.15	10.9	96	97.6	103.0	101.7
27	*M-L Hybrid 820 (Moews-Lowe).....	69.6	66.9	3.91	10.4	100	101.7	100.6	100.9
28	DeKalb Hybrid 894.....	68.6	67.2	2.01	10.6	98	99.7	101.1	100.8
29	*Crow Hybrid 607.....	68.1	66.6	2.17	10.7	100	101.7	100.2	100.6
30	DeKalb Hybrid 883.....	71.8	66.4	7.43	10.8	100	101.7	100.0	100.4
31	DeKalb Hybrid 892.....	70.6	66.4	5.96	10.6	100	101.7	100.0	100.4
32	*Bear Hybrid OK-130.....	68.4	65.7	3.90	10.6	100	101.7	98.9	99.6
33	*National Hybrid 128 (Brooks).....	65.6	65.4	.39	10.2	100	101.7	98.3	99.2
34	Waddell Utility White Dent.....	66.9	66.2	1.02	11.3	94	95.6	99.7	98.6
35	DeKalb Hybrid 891.....	66.5	64.6	2.83	11.8	99	100.7	97.2	98.1
36	Funk Hybrid G-527 (W).....	67.1	65.6	2.18	11.3	93	94.6	98.7	97.7
37	DeKalb Hybrid 919 (W).....	65.7	63.4	3.45	11.4	99	100.7	95.4	96.7
38	Funk Hybrid G-86.....	64.0	63.5	.70	10.6	98	99.7	95.6	96.6
39	Hoosier Crost Hybrid 818.....	65.8	63.0	4.29	11.2	98	99.7	94.8	96.0
40	Iowearth Hybrid 30.....	64.9	62.3	3.96	10.7	100	101.7	93.7	95.7
41	St. Charles White.....	63.9	63.1	1.24	11.7	94	95.6	94.9	95.1
42	*Crow Hybrid 804.....	65.1	61.7	5.22	11.7	100	101.7	92.9	95.1
43	DeKalb Hybrid 922 (W).....	64.2	61.8	3.76	11.3	98	99.7	92.9	94.6
44	*Pioneer Hi-Bred 501 (W).....	62.2	61.8	.64	11.5	97	98.7	92.9	94.4
45	DeKalb Hybrid 816.....	67.6	60.4	10.72	10.8	100	101.7	90.8	93.5
46	Mangelsdorf Hybrid XX-1.....	61.6	60.2	2.38	10.1	98	99.7	90.5	92.8
47	*Crow Hybrid 701 (W).....	64.5	59.8	7.19	11.3	99	100.7	90.0	92.7
48	DeKalb Hybrid 825.....	62.8	59.4	5.30	10.4	100	101.7	89.4	92.5
49	● Average of 5 open-pollinated varieties.....	<b>61.8</b>	<b>61.0</b>	<b>1.24</b>	<b>11.5</b>	<b>92.8</b>	<b>94.4</b>	<b>91.8</b>	<b>92.4</b>
50	Wilson Yellow Dent.....	61.4	60.7	1.19	10.7	91	92.6	91.3	91.6
51	DeKalb Hybrid 917 (W).....	64.9	59.4	8.45	14.5	96	97.6	89.3	91.4
52	*M-L Hybrid 825 (Moews-Lowe).....	66.3	58.1	12.43	10.6	100	101.7	87.4	91.0
53	Waddell Utility Yellow Dent.....	60.2	59.4	1.34	10.7	92	93.6	89.3	90.4
54	McLurkin White Dent.....	56.5	55.7	1.41	12.9	93	94.6	83.8	86.5
Average of all entries.....		69.1	66.5	3.82	11.1	98.3	.....	.....	.....

\*Less than 5 bushels of seed sampled.

(For two- and three-year summaries of results on this field see page 206.)

A difference of less than 5.2 bushels between total yields of any two entries in this table is not significant.



Table 13.—SOUTHWESTERN ILLINOIS: Modoc

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
1939									
		bu.	bu.	perct.	perct.	perct.	perct.	perct.	
1	<sup>1</sup> DeKalb Hybrid 899.....	82.1	79.9	2.71	14.8	97.8	101.7	118.4	114.2
2	<sup>2</sup> Illinois Hybrid 450 (Whisnand).....	78.2	77.8	.48	15.5	98.9	102.8	115.3	112.2
3	<sup>2</sup> Illinois Hybrid 448 (Whisnand).....	77.9	77.3	.73	16.7	98.9	102.8	114.6	111.7
4	<sup>1</sup> Funk Hybrid G-83.....	78.3	76.2	2.64	15.4	100	104.0	112.9	110.7
5	<sup>1</sup> Funk Hybrid G-84.....	78.1	75.7	3.09	15.1	97.8	101.7	112.3	109.6
6	<sup>2</sup> Illinois Hybrid 200 (Pfeifer).....	76.6	74.5	2.73	13.2	97.5	101.4	110.4	108.2
7	Funk Hybrid G-527 (W).....	74.2	73.8	.54	16.2	94	97.7	109.3	106.4
8	<sup>2</sup> Pioneer Hi-Bred 313.....	74.3	73.4	1.24	14.7	95	98.8	108.7	106.2
9	DeKalb Hybrid 816.....	73.6	71.7	2.60	14.0	100	104.0	106.3	105.7
10	<sup>2</sup> I.H.P. Hybrid 422.....	75.0	71.8	4.26	14.1	98.9	102.8	106.4	105.5
11	<sup>3</sup> Funk Hybrid G-101.....	73.4	71.4	2.78	15.4	100	104.0	105.8	105.3
12	<sup>1</sup> Illinois Hybrid 805 (Holmes).....	73.4	72.1	1.81	14.6	97	100.8	106.8	105.3
13	<sup>1</sup> Pioneer Hi-Bred 502 (W).....	72.1	71.8	.44	15.8	96.7	100.5	106.4	104.9
14	<sup>1</sup> Funk Hybrid G-46.....	75.4	72.0	4.60	13.9	95.5	99.3	106.7	104.8
15	<sup>2</sup> I.H.P. Hybrid 11.....	74.8	73.8	1.34	12.9	85	88.4	109.4	104.1
16	<sup>3</sup> Seeber Hybrid 36.....	72.4	70.4	2.72	13.9	98.9	102.8	104.4	104.0
17	<sup>2</sup> Illinois Hybrid 784 (Pfeifer).....	71.2	70.4	1.15	16.9	97.5	101.4	104.4	103.6
18	<sup>2</sup> DeKalb Hybrid 919 (W).....	71.2	70.5	.90	15.2	96.3	100.1	104.6	103.5
18	DeKalb Hybrid 887.....	71.8	70.1	2.25	15.1	98	101.9	104.0	103.5
18	Funk Hybrid G-135.....	72.2	69.8	3.35	16.0	99.5	103.4	103.5	103.5
21	<sup>1</sup> Funk Hybrid G-167.....	72.2	70.1	2.88	16.5	96.7	100.5	103.9	103.1
22	<sup>2</sup> DeKalb Hybrid 888.....	69.9	69.1	1.10	14.4	98.9	102.8	102.4	102.5
23	<sup>1</sup> Illinois Hybrid 885A (Henley).....	71.5	70.0	2.15	13.9	94.4	98.1	103.8	102.3
24	<sup>1</sup> Illinois Hybrid 863 (Burrus).....	70.7	69.2	2.19	16.2	96.7	100.5	102.6	102.0
25	<sup>1</sup> Funk Hybrid G-86.....	68.9	68.4	.74	15.1	96.7	100.5	101.4	101.2
26	<sup>1</sup> Hoosier Crost Hybrid 818.....	69.8	67.9	2.74	14.4	96.7	100.5	100.6	100.6
27	<sup>2</sup> Bear Hybrid OK-92.....	69.0	67.4	2.39	17.2	97	100.8	99.9	100.1
28	<sup>1</sup> Bear Hybrid OK-78.....	68.7	66.7	2.82	14.3	98.9	102.8	98.9	99.9
29	<sup>1</sup> Iowa Hybrid 3342 (Nickel Bros.).....	70.2	68.2	2.87	12.5	92.2	95.8	101.0	99.7
30	<sup>1</sup> Iowaltb Hybrid 29A.....	69.5	67.5	2.87	14.9	94.4	98.1	100.0	99.6
31	<sup>1</sup> DeKalb Hybrid 917 (W).....	69.7	67.7	2.82	16.7	92.9	96.6	100.4	99.4
32	<sup>1</sup> National Hybrid 130 (Brooks).....	69.1	67.3	2.60	13.8	94.4	98.1	99.8	99.3
33	<sup>1</sup> Pioneer Hi-Bred 501 (W).....	67.6	66.1	2.20	15.2	98.9	102.8	98.0	99.2
33	DeKalb Hybrid 891.....	69.0	65.9	4.44	15.3	100	104.0	97.7	99.2
35	<sup>1</sup> Funk Hybrid G-56.....	67.8	67.1	1.09	14.2	94.4	98.1	99.4	99.1
36	<sup>2</sup> DeKalb Hybrid 883.....	68.1	66.1	3.01	14.6	97.5	101.4	97.9	98.8
37	<sup>1</sup> DeKalb Hybrid 918B (W).....	68.2	66.5	2.50	15.5	95.6	99.4	98.5	98.7
38	<sup>1</sup> M-L Hybrid 825 (Moews-Lowe).....	67.2	65.4	2.72	14.4	98.9	102.8	96.9	98.4
39	<sup>1</sup> Iowaltb Hybrid 29N.....	66.2	65.3	1.45	14.0	97.5	101.4	96.7	97.9
40	<sup>1</sup> Funk Hybrid G-566 (W).....	67.0	64.8	3.21	17.6	98.9	102.8	96.1	97.8
41	<sup>1</sup> Bear Hybrid OK-67.....	66.6	64.6	2.95	13.5	99	102.9	95.8	97.6
42	<sup>1</sup> Iowaltb Hybrid 28N.....	66.4	65.8	.80	17.3	92.2	95.8	97.6	97.2
43	<sup>1</sup> M-L Hybrid 820 (Moews-Lowe).....	67.6	65.5	3.12	12.9	93.3	97.0	97.1	97.1
44	<sup>2</sup> I.H.P. Hybrid 444.....	66.6	65.0	2.45	12.5	95	98.8	96.4	97.0
44	<sup>1</sup> Funk Hybrid G-123.....	66.7	64.7	2.98	15.2	96.7	100.5	95.9	97.0
44	<sup>1</sup> DeKalb Hybrid 894.....	66.3	64.1	3.32	15.4	98.9	102.8	95.0	97.0
47	<sup>1</sup> Illinois Hybrid 710 (Nickel Bros.).....	64.9	63.3	2.47	13.1	98.9	102.8	93.8	96.0
48	<sup>2</sup> DeKalb Hybrid 892.....	66.4	62.9	5.37	13.7	100	104.0	93.2	95.9
49	<sup>1</sup> St. Charles White.....	64.2	62.5	2.67	16.2	94.4	98.1	92.6	94.0
50	<sup>1</sup> Bear Hybrid OK-80.....	64.8	60.9	6.09	14.5	100	104.0	90.2	93.6
51	<sup>2</sup> DeKalb Hybrid 825.....	60.7	59.1	2.63	12.6	96.3	100.1	87.6	90.7
52	<sup>1</sup> DeKalb Hybrid 922 (W).....	60.5	59.9	.97	17.9	92.2	95.8	88.8	90.6
53	<sup>1</sup> Leaming.....	61.8	59.0	4.57	20.5	87.7	91.2	87.5	88.4
54	<sup>2</sup> Mobawk.....	57.7	56.8	1.51	16.9	93.8	97.5	84.2	87.5
●	Average of 5 open-pollinated varieties.....	<b>58.7</b>	<b>56.8</b>	<b>3.24</b>	<b>17.2</b>	<b>91.5</b>	<b>95.1</b>	<b>84.2</b>	<b>86.9</b>
55	<sup>1</sup> Mangelsdorf Hybrid XX-1.....	59.4	55.1	7.27	13.9	88.9	92.4	81.7	84.4
56	<sup>2</sup> McLurkin White Dent.....	56.1	53.9	3.96	17.8	93.8	97.5	79.9	84.3
57	<sup>1</sup> Beeckerle Yellow Dent.....	53.6	51.7	3.51	14.8	87.8	91.3	76.6	80.3
Average of all entries.....		69.2	67.5	2.59	15.1	96.2	....	....	....

\*Less than 5 bushels of seed sampled. <sup>1</sup>Average of 9 plots instead of 10. <sup>2</sup>Average of 8 plots instead of 10. <sup>3</sup>Average of 7 plots instead of 10.

A difference of less than 6.4 bushels between total yields of any two entries in this table is not significant.

## SOIL ADAPTATION TESTS

Studies of the relation of soil productivity to hybrid corn performance were continued in 1939 at Sibley and Urbana. Ideal areas for this purpose were available at each location.

**Soils.** The fertile area at Sibley consists of Proctor silt loam on which alfalfa has been grown for the past two years. The less fertile area is an untreated heavily cropped Elliott silt loam which is badly eroded on the more sloping parts. At Urbana the two areas, which are on the Agronomy south farm, differ in productivity as a result of the long-continued use of different cropping systems. In the Southwest rotation a high state of productivity has been maintained by systematically rotating corn, oats, hay, and wheat with a red-clover catch crop. The South-Central area has been depleted of fertility by a rotation of corn, corn, corn, and soybeans. Both plots at Urbana have received manure and phosphate. The Southwest rotation has had slightly more limestone than the South-Central. The soil type of the two fields is mainly Muscatine silt loam.

**Season.** The weather in 1939, which favored high yields, was fairly uniform at all locations. Mechanical difficulties in planting and cultivating caused a very irregular stand on the better soil at Sibley, reducing yields and the reliability of the ratings. The less productive area at Urbana suffered during and after midseason from a lack of available nitrogen. This condition caused weakness of stalk, which resulted in severe lodging accompanied by light chaffy corn with many defective kernels.

**Results.** The 1939 results were not greatly different from those in 1937 and 1938, equally high yields being produced in all three years. Hybrids demonstrated their capacity for high yields especially on the highly fertile field at Urbana. The average yield of the five best hybrids on the soil of high fertility was 19.7 bushels better than Station Yellow Dent. At Sibley on soil of low fertility the yield of the five best hybrids was 15.3 bushels above the yield of the open-pollinated varieties. This exceptionally wide difference at Sibley on the low-fertility level was probably due in part to favorable weather causing an especially high yield and in part to the wider adaptability that is being developed in hybrids. Adapted hybrids have much greater resistance to unfavorable conditions than most of the open-pollinated varieties.

The 1939 tests emphasize again the great importance of maintaining the soil in a high state of fertility if advantage is to be taken of the high-yielding capacity of the better hybrids. On the highly fertile soil at Urbana, U. S. Hybrid 5 demonstrated, by standing at the top of the list, that it has a great capacity for utilizing plant food. This hybrid has ranked at the top or near the top for four consecutive years. On the less fertile soil, however, it has never had a high ranking.

Table 14.—SOIL ADAPTATION TEST: Central Illinois, Sibley

Rank	Entry	Total acre yield	Moisture in grain at harvest	Percent erect plants	Rating for—		
					Erect plants	General perform.	Total yield
PROCTOR SILT LOAM: Productivity high (Farm 41) <sup>1</sup>							
		bu.	perct.				
1	Sibley Estate Hybrid 753B.....	102.3	14.0				111.6
2	U. S. Hybrid 5.....	98.7	12.5				107.6
3	Illinois Hybrid 247.....	98.1	17.5				107.0
3	(38-11 x 5120) (Hy x 317).....	98.1	16.2				107.0
5	Crow Hybrid 360A.....	96.6	12.7				105.3
6	U. S. Hybrid 13.....	95.1	14.9				103.7
7	Illinois Hybrid 200.....	94.1	16.2				102.6
8	Illinois Hybrid 246.....	93.2	15.4				101.6
9	Illinois Hybrid 126.....	92.9	16.0				101.3
10	Illinois Hybrid 805.....	92.0	15.2				100.3
11	Illinois Hybrid 201.....	91.8	16.3				100.1
12	Sibley Estate Hybrid 753A.....	91.3	17.0				99.6
13	U. S. Hybrid 35.....	90.7	14.7				98.9
14	Sibley Estate Hybrid 588.....	88.8	14.6				96.8
15	● Station Yellow Dent.....	<b>86.2</b>	<b>15.9</b>				<b>94.0</b>
16	Illinois Hybrid 374.....	85.8	15.4				93.6
17	Illinois Hybrid 566.....	85.7	18.3				93.5
18	U. S. Hybrid 44.....	85.1	14.6				92.8
19	Illinois Hybrid 960.....	84.2	13.4				91.8
20	98 x 38-11.....	83.4	16.0				90.9
	Average.....	92.0	15.3				....
ELLIOTT SILT LOAM: Productivity low (Meyers)							
1	Sibley Estate Hybrid 753B.....	65.1	10.8				119.7
2	Crow Hybrid 360A.....	62.6	9.7				115.1
3	Illinois Hybrid 200.....	62.0	12.9				114.0
4	Illinois Hybrid 247.....	58.8	13.4				108.1
5	Illinois Hybrid 246.....	58.4	12.1				107.4
6	Illinois Hybrid 566.....	56.8	13.4				104.4
7	Illinois Hybrid 805.....	56.6	11.6				104.0
8	Sibley Estate Hybrid 753A.....	56.2	12.3				103.3
9	Illinois Hybrid 960.....	55.0	9.8				101.1
10	U. S. Hybrid 13.....	54.2	12.8				99.6
11	U. S. Hybrid 44.....	53.8	9.9				98.9
12	Illinois Hybrid 201.....	53.7	11.6				98.7
13	U. S. Hybrid 5.....	53.2	11.0				97.8
14	Illinois Hybrid 374.....	52.9	10.0				97.2
15	Sibley Estate Hybrid 588.....	51.3	12.9				94.3
16	U. S. Hybrid 35.....	49.9	10.6				91.7
17	98 x 38-11.....	49.2	12.3				90.4
18	Illinois Hybrid 126.....	46.2	11.5				84.9
19	● Station Yellow Dent.....	<b>46.1</b>	<b>12.1</b>				<b>84.7</b>
20	(38-11 x 5120) (Hy x 317).....	45.7	13.2				84.0
	Average.....	54.8	11.7				....

<sup>1</sup>Owing to unfavorable conditions, the stand on this plot was very irregular and ratings therefore are not significant.

**Averages.** A summary of the performance of the three hybrids that have been included in the plantings on all four areas during the past four years is given in Table 16 (page 214). Some rather important contrasts are shown in this table. On the highly fertile soils U. S. Hybrid 5 stands out, with the highest average yield of 92 bushels an acre, which is 16 bushels better than the yield of the open-pollinated variety, Station Yellow Dent. On the soil of low productivity U. S. Hybrid 5 yielded only 49 bushels an acre, only 8 bushels better than the open-pollinated variety. These tests thus demonstrate the capacity of U. S. 5 to utilize the plant-food materials in highly fertile soils more

Table 15.—SOIL ADAPTATION TEST: Central Illinois, Urbana

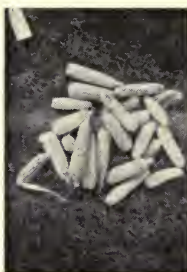
Rank	Entry	Total acre yield	Moisture in grain at harvest	Percent erect plants	Rating for—		
					Erect plants	General perform.	Total yield
MUSCATINE SILT LOAM: Productivity high (Southwest rotation)							
		<i>bu.</i>	<i>perct.</i>				
1	U. S. Hybrid 5	116.7	11.9	89	98.8	104.2	106.0
2	Illinois Hybrid 805	114.5	11.9	85	94.4	101.6	104.0
3	Illinois Hybrid 374	114.2	12.3	90	99.9	102.7	103.7
4	Illinois Hybrid 200	114.1	12.1	89	98.8	102.4	103.6
5	Illinois Hybrid 960	113.2	11.9	89	98.8	101.8	102.8
6	Sibley Estate Hybrid 753A	111.7	12.4	91	101.0	101.3	101.4
7	U. S. Hybrid 13	111.3	12.9	95	105.5	102.2	101.0
7	Illinois Hybrid 201	111.3	11.9	97	107.7	102.7	101.0
9	Sibley Estate Hybrid 588	110.8	12.2	84	93.3	98.8	100.6
10	Illinois Hybrid 126	110.6	12.1	90	99.9	100.3	100.4
11	Illinois Hybrid 566	110.4	12.2	85	94.4	98.8	100.2
12	Illinois Hybrid 206	109.6	12.4	95	105.5	101.0	99.5
13	Crow Hybrid 360A	109.4	12.5	92	102.2	100.0	99.3
14	U. S. Hybrid 35	109.2	11.7	96	106.6	101.0	99.1
15	Illinois Hybrid 247	109.0	13.7	92	102.3	99.8	99.0
16	Illinois Hybrid 246	108.6	12.1	92	102.3	99.5	98.6
17	U. S. Hybrid 44	102.9	12.2	92	102.3	95.6	93.4
18	●Station Yellow Dent	95.0	13.3	78	86.6	86.3	86.2
	Average	111.0	12.3	90.1	....	....	....
MUSCATINE SILT and LOESSIAL CLYDE CLAY LOAM: Productivity medium (South-Central rotation)							
1	Illinois Hybrid 805	54.4	12.2	54	74.8	105.2	115.3
2	Illinois Hybrid 960	52.2	11.3	74	102.5	108.6	110.6
3	Illinois Hybrid 246	52.0	11.7	66	91.4	105.5	110.2
4	U. S. Hybrid 13	50.7	11.5	93	128.9	112.8	107.4
4	Crow Hybrid 360A	50.7	11.3	91	126.1	112.1	107.4
6	Illinois Hybrid 247	48.2	11.8	71	98.4	101.2	102.1
7	Illinois Hybrid 200	48.1	11.9	42	58.2	91.0	101.9
8	U. S. Hybrid 44	48.0	11.4	96	133.0	109.5	101.7
8	U. S. Hybrid 5	48.0	11.3	76	105.3	102.6	101.7
10	Illinois Hybrid 201	47.9	11.5	76	105.3	102.4	101.5
11	Sibley Estate Hybrid 588	47.3	11.8	74	102.5	100.8	100.2
12	Illinois Hybrid 206	46.5	11.7	75	103.9	99.9	98.6
13	Illinois Hybrid 374	45.9	11.4	64	88.7	95.1	97.3
14	Sibley Estate Hybrid 753A	45.6	11.4	67	92.8	95.7	96.6
15	Illinois Hybrid 126	45.1	11.4	72	99.8	96.7	95.6
16	U. S. Hybrid 35	43.8	11.1	95	131.6	102.5	92.8
17	Illinois Hybrid 566	40.6	11.8	58	80.4	84.6	86.0
18	●Station Yellow Dent	34.3	12.1	55	76.2	73.6	72.7
	Average	47.9	11.6	72.2	....	....	....

satisfactorily than hybrids Illinois 960 and Sibley Estate 588 and to utilize it less satisfactorily than these two hybrids on soils of relatively low fertility.

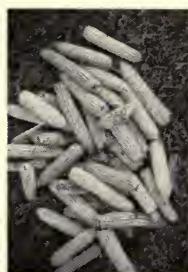
From these data it might seem that yield alone would always be a safe basis for selecting a hybrid for a particular type of soil, but there are other physical characteristics that must also be considered. Capacity to maintain lodging-resistance, disease-resistance, and normal ear and kernel development when grown on poor soil is very important.

Some differences in the ear characteristics of different hybrids grown on soils of high and low fertility are illustrated on pages 212 and 213.

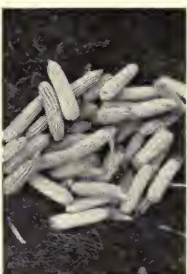




(R4 x Hy) (701 x 317)



(187-2 x 38-11) (K4 x 317)



(R4 x Hy) (187-2 x 317)



(4-8 x 187-2) (Hy x 540)



(R4 x Hy) (K159 x K187)

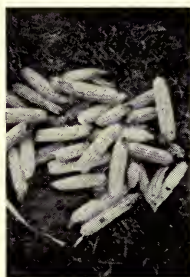


(98 x 317) (Hy x 540)

#### Ear characteristics of six hybrids adapted to soils of varying fertility

These hybrids not only yielded well on soils of high fertility (left picture of each pair) but also made creditable showings on the less fertile soils.



(WF9 x 38-11) (**R4** x 317)(WF9 x 38-11) (**187-2** x 317)(WF9 x 38-11) (**Tr** x 317)(WF9 x 38-11) (**K4** x 317)(WF9 x 38-11) (**Hy** x 317)(WF9 x 38-11) (**98** x 317)

#### Ear characteristics of six hybrids adapted only to fertile soils

These hybrids gave good results on fields of high productivity (left picture of each pair) but had poor yields on the less fertile soil.

Table 16.—SOIL ADAPTATION TESTS: Four-year Summary of Yields at Sibley and Urbana

Entry	Soil of <i>high</i> productivity		Soil of <i>low</i> productivity	
	Acre yield	Increase over open-pollinated	Acre yield	Increase over open-pollinated
U. S. Hybrid 51.....	<i>bu.</i>	<i>bu.</i>	<i>bu.</i>	<i>bu.</i>
U. S. Hybrid 51.....	92	16	49	8
Illinois Hybrid 960.....	90	14	53	12
Sibley Estate Hybrid 588.....	87	11	52	11
Station Yellow Dent.....	76	...	41	...

<sup>1</sup>U. S. Hybrid 5 was tested as Illinois 139 in 1936 and in 1937, as a coded commercial hybrid.

## SUMMARY

1. The average yield of corn on the ten fields in the Illinois corn-performance tests in 1939 was 80.2 bushels an acre, which is 28.2 bushels more than the average for the state. During the six years (1934-1939) over which these tests have been conducted, the average yields on the test fields have exceeded the average yields of the state by 111, 94, 79, 64, 47, and 53 percent respectively.

2. The five best hybrids on all the ten fields in the 1939 Illinois corn-performance tests yielded an average of 16.5 bushels of sound corn an acre above the five open-pollinated varieties. They also exceeded the open-pollinated varieties in lodging resistance, having 12.7 more erect plants per hundred.

3. On every test field the five best hybrids exceeded the five open-pollinated varieties in yield of sound corn and in percentage of erect plants. On the southern Illinois field, where in 1938 the five best hybrids fell below the five open-pollinated varieties in sound corn yield, the superiority of the five best hybrids was 12.2 bushels an acre.

4. In the northeastern, northern, west north-central, southern, and southwestern sections of the state even the five poorest hybrids averaged above the open-pollinated varieties in yield of sound corn.

5. Four-, three-, and two-year summaries are presented for all the fields except the southern, southeastern, and southwestern. The average yield of the hybrids in relation to the open-pollinated checks in the four-year summary compares favorably with the average of the hybrids in the three-year and two-year summaries.

6. Insect damage was not very extensive in 1939. Southern corn rootworm did some noticeable damage on the Littleton and Cambridge fields. Corn leaf aphids attacked the Libertyville field at tasseling time.

7. Comparisons for susceptibility to stalk rot were made on the Sullivan, Littleton, and Cambridge fields. Hybrids that were markedly

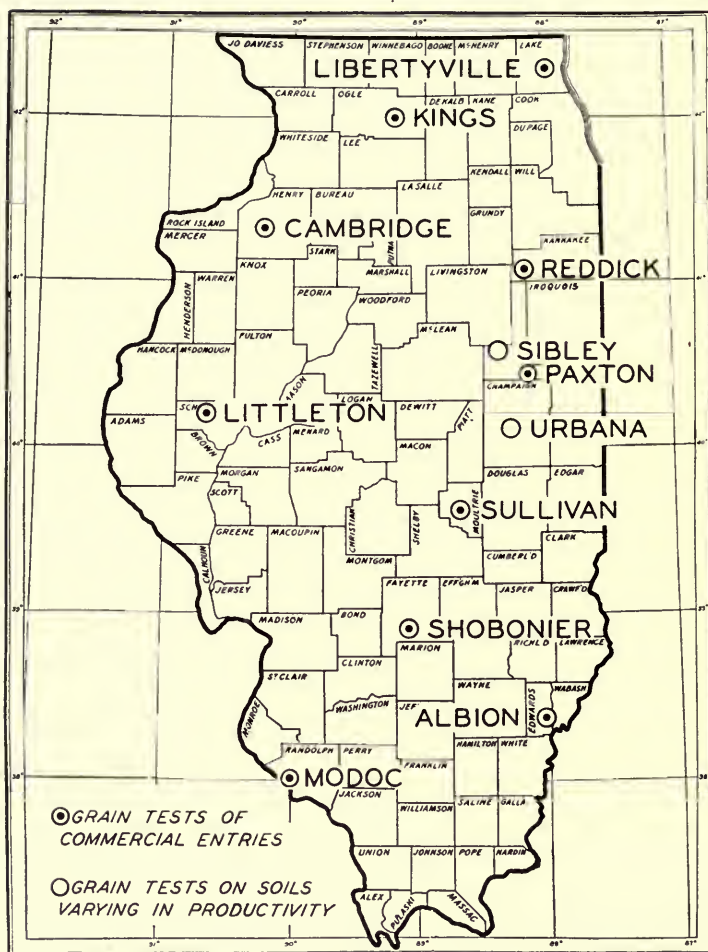
Table 17.—Summary of Hybrid Superiority Over Open-Pollinated Entries, Nine Fields, 1936-1939

Section of Illinois	Four-year average			Three-year average			Two-year average		
	Number of hybrid entries	Sound corn yield greater	More erect plants per hundred	Number of hybrid entries	Sound corn yield greater	More erect plants per hundred	Number of hybrid entries	Sound corn yield greater	More erect plants per hundred
		<i>bu.</i>			<i>bu.</i>			<i>bu.</i>	
Northeastern.....	4	<b>11.1</b>	16.9	7	<b>8.8</b>	14.8	19	<b>8.8</b>	11.5
Northern.....	5	<b>15.0</b>	17.4	13	<b>16.4</b>	17.8	23	<b>15.8</b>	21.4
West North-Central..	5	<b>15.1</b>	16.2	13	<b>15.8</b>	19.8	23	<b>16.6</b>	15.2
East North-Central..	6	<b>13.1</b>	11.9	14	<b>10.3</b>	12.6	22	<b>11.5</b>	12.4
West-Central.....	2	<b>12.5</b>	17.1	5	<b>11.1</b>	19.5	15	<b>11.2</b>	16.4
East-Central.....	2	<b>14.1</b>	4.6	7	<b>11.9</b>	15.0	16	<b>12.7</b>	14.2
South-Central.....	1	<b>5.3</b>	8.7	5	<b>2.9</b>	15.3	15	<b>3.5</b>	5.7
Southern.....	..	....	....	1	<b>2.7</b>	11.2	10	<b>— .1</b>	5.4
Southeastern.....	..	....	....	2	<b>6.2</b>	12.0	12	<b>5.5</b>	5.4
Average.....	..	<b>12.3</b>	13.3	..	<b>9.6</b>	15.3	..	<b>9.5</b>	12.0

susceptible to *Diplodia* stalk rot were low yielding. Stewart's disease was most severe on the Sullivan field. There was some damaged corn on all test fields due to ear rots, but the hybrids appeared to have no striking advantage over the open-pollinated varieties with respect to resistance to these rots.

8. The soil-adaptation tests showed that hybrid corn grown on soil of high fertility will produce very high yields. In fact, the yields of hybrids are much more markedly increased by good soil-treatment practices than are the yields of open-pollinated varieties. Hybrids, however, do not perform even relatively as well on poor soils as they do on good soils. Certain physical characteristics—such as the tendency of the plant to lodge, susceptibility to disease, abnormal ear and kernel development—are sometimes as important in determining the adaptability of a hybrid to a given soil as are the yields of grain produced.

## LOCATION OF 1939 TEST FIELDS



Ten fields, distributed so as to represent the more important climatic areas of the state, were used in the 1939 general-performance tests; two others, Sibley and Urbana, were used in soil-adaptability tests.

The fields chosen for the tests were, on the whole, medium to high in productivity.













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